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SEVENTEENTH BIENNIAL REPORT

of the

Oregon State Highway Commission

1945-1946

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OF THE

Oregon State Highway Commission

For the Period July 1, 1944, to June 30, 1946

OREGON STATE HIGHWAY COMMISSION

T. H. BANFIELD, Chairman
ARTHUR W. SCHAUPP, Commissioner
BEN R. CHANDLER, Commissioner

R. H. BALDOCK, State Highway Engineer
J. M. DEVERS, Chief Counsel
H. B. GLAISYER, Secretary

STATE PRINTING DEPT.

Crater Lake and the Phantom Ship as viewed from the East Rim Park Road.

OREGON STATE HIGHWAY COMMISSION

Former Members and Terms

E. J. Adams, Eugene, Feb. 28, 1917, to Mar. 31, 1918.
W. L. Thompson, Pendleton, Feb. 28, 1917, to Oct. 15, 1919.
S. Benson, Portland, Feb. 28, 1917, to Nov. 15, 1920.
R. A. Booth, Eugene, April 1, 1918, to May 28, 1923.
J. N. Burgess, Pendleton, Oct. 16, 1919, to Nov. 21, 1919.
E. E. Kiddle, Island City, Nov. 26, 1919, to Dec. 28, 1920.
J. B. Yeon, Portland, Nov. 22, 1920, to Mar. 31, 1923.
W. B. Barratt, Heppner, Jan. 8, 1921, to Mar. 27, 1923.
Wm. Duby, Baker, March 27, 1923, to July 31, 1927.
H. B. Van Duzer, Portland, April 1, 1923, to October 7, 1931.
W. H. Malone, Corvallis, May 28, 1923, to March 31, 1927.
C. E. Gates, Medford, April 1, 1927, to March 11, 1931.
Robert W. Sawyer, Bend, August 1, 1927, to May 28, 1930.
M. A. Lynch, Redmond, May 29, 1930, to August 1, 1931.
Chas. K. Spaulding, Salem, March 11, 1931, to Feb. 16, 1932.
Wm. Hanley, Burns, August 1, 1931, to February 16, 1932.
J. C. Ainsworth, Portland, Oct. 8, 1931, to Feb. 16, 1932.
Leslie M. Scott, Portland, Feb. 17, 1932, to March 31, 1935.
Carl G. Washburne, Eugene, Feb. 17, 1932, to Oct. 9, 1935.
E. B. Aldrich, Pendleton, Feb. 17, 1932, to March 31, 1940.
F. L. Tou Velle, Jacksonville, Oct. 9, 1935, to March 31, 1939.
Henry F. Cabell, Portland, April 1, 1935, to Feb. 28, 1943.
Huron W. Clough, Canyonville, April 1, 1939, to April 7, 1943.
Herman Oliver, John Day, April 1, 1940, to March 31, 1943.
Merle R. Chessman, Astoria, April 8, 1943, to Oct. 1, 1946.

Present Members

T. H. Banfield, Portland, appointed February 28, 1943.
Arthur W. Schaupp, Klamath Falls, appointed April 1, 1943.
Ben R. Chandler, Coos Bay, appointed October 1, 1946.

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LETTER OF TRANSMITTAL

Salem, Oregon,

January 1, 1947.

HONORABLE EARL SNELL,
Governor of the State of Oregon.

Dear Sir:

In compliance with the provisions of section 100-115, O. C. L. A., we have the honor of presenting to you the report of the Oregon State Highway Commission for the period from July 1, 1944, to June 30, 1946.

Respectfully yours,

OREGON STATE HIGHWAY
COMMISSION,

T. H. BANFIELD, Chairman,
ARTHUR W. SCHAUPP, Commissioner,
BEN R. CHANDLER, Commissioner.

BIENNIAL REPORT

OF THE

Oregon State Highway Commission

Fiscal Years 1945 and 1946

Section One

GENERAL COMMENTS

War Period

During the war, highway construction was limited to projects approved by the Army or the Navy and the War Production Board as being essential to the war effort. Such projects included the building of access roads to military or naval installations or to war industries, the building of flight strips or small satellite air fields adjacent to highways, and the building of access roads to mineral deposits and forests.

Following is a table illustrating the extent of the Federal war emergency program:

TABLE I

Federal War Emergency Programs—1941-1946

Class of Projects	Total Amount		
	State	Federal	Total
Access Road Projects	$ 534,000	$ 4,969,000	$ 5,503,000
Strategic Network Projects	1,294,000	2,867,000	4,161,000
Flight Strips	----------	1,195,000	1,195,000
	$ 1,828,000	$ 9,031,000	$10,859,000

Highway Maintenance

During the war years, the State Highway Commission faced many adverse conditions such as shortage of manpower and of materials, and the Commission found it very difficult to provide smooth, serviceable roads to carry the essential war and civilian traffic. It had hoped that, with the cessation of hostilities, these shortages would disappear. However, at the time this report is written, while the manpower shortage has eased somewhat, it is still difficult to obtain highway workers and the shortage of materials is even more pronounced in some respects than during the war. During the war, the Highway Commission was able to secure priorities for certain scarce materials, but such assistance is no longer obtainable.

Fortunately, before the war started, the Highway Commission procured a number of new trucks, graders and other pieces of essential equipment. The Department, therefore, entered the war period well supplied with equipment. It was impossible to procure any appreciable quantities of new equipment during the war, but the Commission expected to be able to procure surplus war equipment immediately after the cessation of hostilities, which condition unfortunately has not materialized to any considerable extent. As a result, shortage of proper equipment to maintain the highways is becoming quite critical. The cost of maintenance has steadily increased due (1) to increases in cost of labor and materials; (2) to increases in the number of heavy trucks using the highways, including a great increase in log truck traffic; and (3) to cost of repairing old equipment.

The Postwar Construction Program

It is generally recognized that, even before the war, the building of highways over the nation, including those in the State of Oregon, was failing to keep pace with the economic growth of the Nation and the State. In Oregon, the failure to build requisite highways and to reconstruct highways subject to heavy traffic was, without doubt, penalizing the economic development of the State. The material curtailment of construction during the war has caused the State to be still

farther behind in the program of modernizing and extending its needed highways.

Realizing the need for greatly increased highway development, the Congress has made substantial appropriations of federal-aid funds to be used on a matching basis with state funds to improve the nation's highways. Under the terms of the 1944 Road Act, Public Law No. 521—78th Congress, $500,000,000 of federal funds were made available to the states for each of the three postwar years, the first postwar year beginning on July 1, 1945. In making these appropriations for the building of highways, the Congress recognized not only the requirements of the primary federal aid highway network, but also the need of increased assistance to the states in the building of secondary and feeder roads as well as the necessity for making federal funds available for the building of express highway routes through cities.

Of the national total of $500,000,000, $225,000,000 was made available each year for primary federal-aid highways, both rural and urban; $150,000,000 for secondary and feeder roads; and $125,000,000 for construction on federal-aid routes through

A section of U. S. 99 reconstructed south of Wolf Creek in Josephine County.

urban areas having populations of more than 5,000. Oregon's shares of these funds, together with Oregon's matching requirements and the totals of construction funds available, are shown in accompanying Table II.

TABLE II

Oregon's Allotment of Funds Under Federal Aid Highway Act of 1944

(Amounts given are the amounts for each year of the 3-year postwar period)

Class of Projects	Oregon's Share Federal Funds	State Match Money: Net Cooperation (Av. 37.88%)	State Match Money: Extra for Nonparticipating Items	State Match Money: Total State Funds	Total Federal Plus State Funds
Federal Aid Highways (Rural and Urban)	$ 3,728,908	$ 2,273,842	$ 312,250	$ 2,586,092	$ 6,315,000
Secondary and Feeder Roads	2,544,582	1,551,654	213,764	1,765,418	4,310,000
Urban Areas (Federal Aid Routes)	810,873	494,460	69,667	564,127	1,375,000
Totals	$ 7,084,363	$ 4,319,956	$ 595,681	$ 4,915,637	$12,000,000

Federal funds are made available generally on a fifty-fifty matching basis, due consideration being given to a reduction in matching requirements in the case of states having public lands. In Oregon, the matching basis is approximately 40 per cent state funds to 60 per cent federal funds.

In addition to the federal allocation of funds for the building of federal-aid primary highways, federal-aid secondary highways and federal-aid urban highways, the Act of 1944 provided $25,000,000 per year for the building of forest highways, of which about $3,400,000 per year will be expended in Oregon by the Public Roads Administration.

Prior to the passage of the 1944 Road Act, the State Highway Commission made an extended inspection of nearly all of the State's primary highways and most of its secondary highways. It also conferred with the members of the county courts, many of the city councils and most of the chambers of commerce with relation to the postwar highway program. The Commission asked the official bodies to furnish it with their recommendations as to projects and relative priorities

of projects. The Commission gave due consideration to these recommendations in its selection of projects to create maximum benefits in the various localities.

The forest highway program is selected jointly by the Representatives of the Public Roads Administration, the Forest Service and the Highway Commission. The contracts are let and the work supervised by the Public Roads Administration. Selection has been made of the projects to be included in the forest highway programs for the first and second postwar years.

In addition to the federal aid and forest highway programs, the Commission has selected projects totaling $6,000,000 to be constructed with state funds without federal aid. This program will require the expenditure of about $2,500,000 per year.

The State Highway Commission was among the first of the states in the nation to start contracting the postwar federal-aid program. The first contracts were let on October 29, 1945. It is expected that by January 1, 1947, contracts totaling $13,-500,000 of the federal-aid program and $1,900,000 of the state construction program will have been awarded. The Public Roads Administration has awarded contracts totaling $1,000,000 on the forest highway system.

The Truck Problem

It is quite apparent that motor trucks transporting commodities are necessary to the economic life of the state. Lumbering has now become the chief industry of Oregon and both logs and lumber in increasing amounts are being transported over the highways. It seems obvious that it is necessary to design and to construct wider and stronger highways and bridges for the movement of large vehicles with heavy loads than would be required were the traffic confined to passenger cars and pickups. Such roads can only be provided at materially increased cost.

The studies of the various interim committees of the legislature on motor transportation indicate that the cost of building highways for trucks exceeds the cost of building highways for lighter vehicles by about fifty per cent. The interim report issued on January 1, 1945 for the year 1941 indicated that

the trucks failed to pay their fair share by an amount approximating $800,000. Incidentally, the small trucks (below 16,000 pounds gross weight) paid more than their fair share of the cost, with the result that the larger trucks failed to pay their fair share during 1941 by an amount of $1,230,000.

It is the considered opinion of the Highway Commission that the full use of each highway for the transportation of goods by truck, including commercial transports, logging trucks, farm trucks, et cetera, should be afforded and that the limits on weights and dimensions should be placed as high as the structural and geometric design of the individual highway will permit without damage to the highway and without increased traffic hazard. Action to that end would be in the public interest, as it would reduce the cost of transportation of goods in both intrastate and interstate commerce.

To permit an increase in the gross weight of the train of vehicles and load without increasing the risk of damage to the highway facilities, it is necessary to increase the permissible length of the train of vehicles by a reasonable amount and to require the use of more axles. This, in turn, will reduce the individual axle load and the structural stresses imposed thereby. Increase in length of load can be permitted, however, only when the alignment of the road is sufficiently straight and the pavement is sufficiently wide. It is for that reason that the control of weights and dimensions should take into consideration the design characteristics of the individual road.

During the wartime emergency, the Legislature, under Chapter 266, Laws of 1943, which was continued under Chapter 88, Laws of 1945, gave temporary authorization to the State Highway Commission to grant permits for the required movement of trucks of larger dimension and greater weight than are permitted under existing statutes, this authorization to terminate on July 1, 1947. The law mentions no limiting maximums on either size or weight. Acting under this permissive legislation, the State Highway Commission has issued wartime emergency permits for the movement of oversize and overweight trucks, making such permits subject to such condi-

tions, regulations and specifications as the Commission deemed necessary to give protection to roads and to safeguard other traffic. Sixty-foot vehicles have been permitted to move over a select group of highways, known as Group No. 1 highways, that are sufficiently wide and straight to permit the operation of the longer vehicles with safety. The additional length, permitting additional axles, made possible the increase of the gross weight from 54,000 pounds to 71,200 pounds without increasing the stresses imposed upon bridges and pavements. Group No. 1 highways are sufficiently straight and sufficiently wide to permit vehicles or combinations of vehicles 60 feet in length and 8 feet in width to move over the highway without encroaching upon the opposing traffic lane. With minor improvements, additional roads can be widened and straightened at critical points so as to permit the safe movement of this type of vehicle.

After more than three years of operation under the permit system on the Group No. 1 highways, the Commission can certify that such movements have taken place without appreciable damage to the highway facilities and without undue hazard to the traveling public. It should, however, be borne in mind that these are the maximum sizes and weights that can be permitted without major expenditures for wider and stronger highway facilities.

Log-truck Traffic

One of the controversial issues with which the Highway Commission has been confronted almost constantly is the question of log-truck traffic. The Highway Commission recognizes that the lumber industry is one of the foremost industries of the State and that the potentialities in the utilization of by-products of timber are material, but, in the public interest, control of the weights and dimensions of the log carriers so as not to overstress the highway facilities or to cause undue hazard to the general public, is necessary.

There has been a constant demand on the part of the truckers of logs to induce the Highway Commission to permit greater weights. The Legislature of 1941 adopted the suggestion of the Highway Commission for increased weight

provided the vehicle length were increased and more axles were required to reduce the concentration of the load on the tandem axles. This gave a total gross load, on vehicles equipped with tandem axles on the truck-tractor and tandem axles on the trailer, of 68,000 pounds when the distance between the first and the last axles was approximately 51 feet. The Commission in turn permitted a five per cent tolerance which gave a maximum total gross weight of 71,200 pounds.

The Legislature likewise granted a tolerance of ten per cent to the smaller trucks having single driving axles. When the distance between the first and the last axles is a maximum length of about 37 feet, a tolerance of 5,400 pounds is permitted. The Commission has further permitted an increase of 1,600 pounds, making a total tolerance of 7,000 pounds (in the maximum case) before arrests are made. The law permitting weight tolerance specifically states: "The intent of the act is that said permissible excess weights shall be deemed tolerance weights and not arbitrary increases in gross weights or gross axle or gross wheel weights." The Commission believes that if the loggers will load to the established statute loads, the total tolerance permitted is sufficient for the truckers to avoid overweights subjecting them to fine and penalty. While it is recognized that it is more difficult to load a logging truck than a commercial carrier handling packaged goods and to correctly estimate the weights in each case, the constant loading and weighing of trucks should afford the requisite experience for loggers to estimate well within the tolerance provided.

The Commission has received full cooperation from the leaders of the industry, but some of the haulers of logs have deliberately tried to evade the law by the placing of greater weight on their trucks in order to get a larger pay load. This is evidenced by numerous cases where the haulers are known to have stopped their trucks on roads approaching the highways and waited for the weighmasters to leave the scales before proceeding with the load.

Many of the loggers have contended that the law should be changed, making the M fbm scale of the logs the control rather than the weight of logs. The proponents of this plan

claim that it is much easier for them to estimate the scale of logs than it is the weight of logs, and they could then easily keep within the scale set. It has even been proposed that after securing trial weights the Highway Commission set the scale in the various sections of the state for the various species of timber. The Commission has opposed this type of legislation for the reason that the design of bridges and pavements must be based upon weight. If too great a weight is placed upon either, the stresses imposed will cause the facilities to fail. In order to throw greater light on the subject, the Highway Commission caused an investigation to be made. A number of loads were scaled and then weighed, covering the various species in various parts of the state and the data recorded in a printed report.

The basic principles of structural design, for both road surfaces and bridges, require that the loads be expressed in terms of weight. Any alternate proposal of measurement must be readily converted to weight and bear a constant relationship to weight. If the relationship to weight is not constant under all conditions, then the maximum allowed load measured by this unit must be based upon the most unfavorable relationship that can be anticipated.

The log-scale rule is an excellent rule for its purpose. It is not intended to be a measure of weight or volume and the incidental relationship is so erratic as to be of no practical value whatsoever. The adoption of the proposal of substituting log-scale measurement for weight would either result in unreasonable restrictions on the logging industry by reason of the low load limit necessary to control the heavier material or would be disastrous to the highway facilities because of the movement of loads so greatly in excess of the designed capacity as to cause complete failure. Neither of these results is desirable. Both would handicap the lumber industry and the second proposal would be grossly inimical to the best interest of the people of this state and extremely hazardous to life and property. The highway facilities are designed on the basis of the superimposed load measured in pounds. They cannot be designed on any other basis than that of weight. Load regulations must be on the same basis.

The above observations are given in order to point out clearly the error in attempting to substitute the log scale as a measure of weight for the weight in pounds as now used. The data showing the measurement of logs and the relationship between log scale and actual weight appears in Technical Report No. 44-4, published by the Oregon State Highway Department, which report is available to anyone further interested in the subject.

The Highway Commission has appreciated the problems of the timber industry and has met with members of the industry and the State Police from time to time to consider these problems in relation to the using of the highways. The Commission has experienced fine cooperation with the leaders of the industry. Both the Commission and the leaders of the industry have been concerned with the few wilful and habitual violators who have caused the Commission to take precautionary measures to protect the public interest. For the past two years the Highway Commission has worked closely with the liaison committee of the lumber industry in solving many problems. Action was taken by the industry to institute a self-government plan to prevent in so far as possible the abuse of privilege by logging trucks. The Commission is very grateful for this cooperation.

The interim studies of the Legislature on truck transport for the year 1941 indicated that the logging trucks failed to pay their fair share of the fees and taxes levied by an amount of about $104,000. Since that period, the number of log trucks has materially increased, and the cost of labor and materials used in highway maintenance has advanced nearly fifty per cent, whereas, the fees and taxes paid by road users have not been raised, with the result that it is reasonable to expect this deficit has increased. It is probably not less than $150,000 annually, at present.

The Highway system is far from adequate and maintenance costs have steadily increased due, in the main, to the operation of the heavier motor vehicles on lightly surfaced roads, to the operation of logging trucks and, in particular, to the gross overloading of such trucks which at times has caused rupture and total failure of pavements and bridges.

A study of the records of maintenance costs in the State of Oregon through the year 1941 discloses that the cost of maintaining the road surfaces of all types averaged $144 a mile more on those roads subject to log-truck traffic than on those on which log trucks did not operate.

Of the total 7,200 miles of highways in the state system, approximately 2,400 miles carry log traffic. Commercial transport trucks, farmers' trucks and other types of trucks operate more or less over the entire system, but those sections of highway of more or less comparable construction, carrying rather intensive heavy motor transport, did not show nearly as high a maintenance cost on these surfaces as did comparable sections under concentrated log-haul traffic. This is probably due to the fact that the heavy motor transports, carrying 71,200 pounds gross load, are limited to 32,000 pounds on the dual axles, whereas the log trucks, most of which may carry with legal tolerance 61,000 pounds, are permitted to carry 36,000 pounds (38,000 pounds when the tolerance is added) on the dual axles. Greater concentration of weight tends to accelerate road surfacing failure.

The records of the highway department weighmasters disclose the prevalence of log truck overloading to be quite general. In many cases 40,000 pounds or more have been found to be concentrated on a single set of dual axles. Be that as it may, the product of multiplying the 2,400 miles subject to log-truck traffic by the additional maintenance cost of surfacing, amounting to $144 per mile, gives approximately $345,000 of additional maintenance cost caused by log-truck traffic in the year 1941.

More log trucks are operating now than in 1941 and more sections of light surfacing are being subjected to such haul, so the probabilities are that this annual additional maintenance charge has, by this time, increased to $500,000 or more per year. This does not include the extra maintenance expense borne by the counties, of which the State Highway Department has no record.

This is not the entire story. A search of the state highway records of the past ten years discloses that, in certain

specific instances, pavements were ruptured almost to complete failure and bridges were broken down, both to the extent that ordinary maintenance procedure could not keep the facilities in operation, which necessitated extraordinary expenditures for the immediate reconstruction of the facilities to prevent closure of the road. This record indicates that the sum total of this type of expenditure over the past ten years has been about $2,275,000 or about $227,500 per year, and the probabilities are that the rate of this expenditure will increase rather than decrease.

Summing up the log truck situation it appears:

1. That the log truckers are now failing to pay their fair share of the present cost of the system of roads by an amount of from $100,000 to $150,000 annually.

2. That their operation cost makes necessary an additional maintenance cost, due to heavy loads carried, amounting to from $350,000 to $500,000 per year—possibly more.

3. That this type of operation causes rupture of pavements and failure of bridges, and has cost the State of Oregon for reconstruction not less than $227,500 per year for the past ten years.

The sum total of these extra expenses to the state highway system is somewhere between $675,000 and $875,000 a year.

The cost of maintaining the highways under log-truck traffic is on the increase by reason of the opening up of new stands of timber in the national forests, and the U. S. Forest Service is anxious to make that timber available to industry on account of the shortage of lumber in this country. In past years the Forest Service has been chiefly interested in building roads through the national forests for scenic and recreational purposes and has given little thought to building a type of road satisfactory to serve as access roads to haul timber from the forests to the mills. Not only are most of the forest highways inadequate to stand these concentrated weights, but the secondary highways to which they lead are in little better condition. It will require many years and the expenditure of large sums of money to bring these roads to a standard

to withstand heavy loads. The Federal Government, as the owner of this timber, should provide more funds for the building of these forest access roads and charge the cost in timber sales.

The State Highway Commission is anxious to see the lumber industry go forward because that industry contributes largely to the prosperity of the State. A realistic study should be made by the U. S. Forest Service of ways and means to assist the State in bringing these access roads to a condition that will permit the industry to advance.

Report on the Cost to Complete the Present State Highway System, Including Resume of Capital Investment, Depreciation and Present Worth

The standards of construction used even as recently as fifteen years ago are obsolete. The narrow, crooked highways of that era are hazardous, particularly in the operation of mixed traffic (trucks and passenger cars) and cause so much driving strain that people demand that such roads be modernized. It is therefore highly important to attain a design affording reasonable speed with safety, to minimize driving strain and, by the employment of the principles of good highway design, to offset, in so far as possible, the present hazards of motor-vehicle operation, particularly on the main arterial highways.

It has been estimated that the cost of building highways wide enough and strong enough to stand truck travel increases the cost of the highways by one-third. Since trucks are necessary to forward the economy of the state, standards of construction call for a design for an 18,000 pound wheel load and for about 72,000 pounds total load. Present standards require that pavements be of a width from 20 to 24 feet, bridges from 26 to 30 feet, and curvature to be lessened to an extent which permits the driving of the highways at reasonable speeds with safety.

The regulations issued under the 1944 Federal-Aid Road Act require that on the interstate highways, which in Oregon comprise US30 from Portland to the Idaho line and US99

Overhead lighted signs on the Albany overcrossing at the North Lyon Street Ramp.

Landscaping project along North Lyon Street Ramp at Albany overcrossing.

from the Washington line to the California line, access be controlled to prevent the ribbon development along highways which creates major hazards and destroys highway usefulness. The Highway Commission has adopted this principle in the relocation and rebuilding of the arterial highways of the state. Sufficient access is afforded to permit the farming of the adjacent land, logging operations, et cetera, but the right of access to other than stated points and the right to use such access for business purposes is purchased when the right of way is procured.

It is the earnest belief of the Commission that, if this procedure is followed in the reconstruction period just ahead, in ten years' time the benefits to the people of the state in affording safe and reasonably fast traffic arterials to the road users will be quite apparent. Sufficient legislation now exists to control access in the rural areas but more authority should be given in the cities so that the city councils and the Highway Commission may enter into binding contracts with relation to the closure of streets necessary to protect the through ways from hazards of uncontrolled access.

By 1934, the total investment in the 6,600-mile system of state highways then existing amounted to $180,100,000. Construction of the system began in a small way in 1913 and by 1934 considerable depreciation had taken place. Studies indicated that the net worth of the system in 1934 (total investment less depreciation) was $152,850,000. Not all the highways at that time were built wide enough and strong enough for trucks. It was estimated that to build the system to the extra width and strength required for truck transport would cost an additional $147,150,000, yielding a system having a net worth (total investment less depreciation) of $300,000,000. Of this amount $100,000,000 represented the additional investment or worth required to carry truck transport with reasonable safety to the public and with moderate maintenance cost.

By 1941, the mileage had increased to 7,200 miles. The total capital investment amounted to $234,000,000 and the net worth at that time equaled $182,000,000. By the end of 1945 the total investment had increased to $257,550,000 and the worth of the system to $188,300,000.

Reverting now to the needed net worth as distinguished from actual net worth, the increase in the system mileage from 6,600 to 7,200 necessitates a corresponding increase in needed net worth, from $300,000,000 to $330,000,000, costs given being on a prewar cost basis.

The value of the dollar has shrunk and the modernization of the present highway system, which before the war was estimated to cost $141,700,000, will at present prices cost about $212,500,000. At best this modernization will require twenty years for accomplishment. During this twenty years there will be a normal depreciation in highways and streets. To keep abreast of this depreciation will require a reconstruction expenditure averaging about $6,500,000 per year and totaling for the 20-year period $130,000,000.

In addition to these amounts, new obligations have arisen. Approximately $72,500,000 will be required for arterial highway construction in cities, $15,000,000 additional will be required to improve the rural portions of the newly designated

TABLE III

Illustrating the Development of the State Highway and Park System with Reference to Capital Investment, Depreciation and Present Worth

Year	Total Capital Investment at End of Year	Construction and Reconstruction Expenditures			Net Worth of Facilities
		Total Expenditures for Construction and Reconstruction	To Res'ore Depreciated Facilities	Net Gain or Increase in Capital Investment by Extension and Betterment of Facilities	
1913	$	$	$	$	$
		180,100,000	27,250,000	152,850,000	
1934	180,100,000				152,850,000
		53,900,000	24,750,000	29,150,000	
1941	234,000,000				182,000,000
		23,550,000	17,250,000	6,300,000	
1945	257,550,000				188,300,000
Totals	$257,550,000	$257,550,000	$ 69,250,000	$188,300,000	$188,300,000

Forecast to complete system on basis of present expenditures:

	$	$480,165,000	$130,165,000	$350,000,000	$
1966	737,715,000				538,300,000
Totals	$737,715,000	$737,715,000	$199,415,000	$538,300,000	$538,300,000

system of interstate highways to required standards, $40,000,000 will be required to construct the 1,400 miles of county roads which have been made a part of the federal secondary highway system, and $10,000,000 or approximately $500,000 per year for the development of the system of state parks for the use and enjoyment of the people. Adding all of these amounts together gives a total of about $480,000,000 as the amount that should be expended for highway construction and reconstruction during the next twenty years, which equals an expenditure of $24,000,000 per year.

The relationship of capital investments to depreciation and net worth during the period from 1913 to 1966 is shown in accompanying Table III.

It might be argued that it is not necessary to bring all highways on the state system to these standards now and that economics would not justify such a procedure. With respect to certain highways, this may be true now, but it is quite evident that Oregon's highway program has lagged behind and that material expenditures over an extended period of time are required to bring those roads, so vitally needed for the economic development of the state, to a standard commensurate with the requirements for highway transport. With the expected growth and development of the state, present traffic problems will become more acute, new ones will develop and the need for more adequate highways will constantly increase. In the meantime, and until this is accomplished, the State Highway Department will be required to spend increasing amounts of money in maintenance to compensate for the lack of stability of the highway facilities subject to truck transport. The cost of maintenance is now about $1,000 a mile. It is believed that, if the roads were strengthened, this could be reduced materially.

The depreciation of the system is manifest in two ways: (1) functional obsolescence, and (2) structural deterioration. Of the two, the former causes by far the greater amount of depreciation. To illustrate, the Pacific Highway in Southern Oregon through the Siskiyou Mountains and over the Sexton Mountain has been reconstructed. Both of these sections were narrow and crooked, but the foundation strength of

the pavements and bridges was adequate for truck transport. The narrow pavements and heavy curvature made such operation hazardous with the rapid increase in traffic volume which developed subsequent to their construction. The original investment in right of way, grading, bridges and pavements was, therefore, entirely lost. None of it was salvageable.

There are many illustrations representing structural deterioration wherein the sudden application of heavy log loads has ruptured and almost totally destroyed light pavements which had been in use for many years for recreational or farm purposes. In those cases, major reconstruction was necessary,

TABLE IV

Estimated Average Annual Disbursement of Road and Street Funds (Not Including Local Tax Levies) for the Calendar Years, 1947 and 1948

	Annual Amounts
Item 1 Revenue collection	$ 1,545,000
" 2 Contributions to state police	500,000
" 3 Contributions to counties and cities	4,600,000
" 4 State highway maintenance	7,300,000
" 5 Reconstruction to offset depreciation	4,500,000*
" 6 Minor betterments	875,000
" 7 Capital investment to modernize highway system	16,155,000*
" 8 Capital investment in buildings and parks	575,000
" 9 Maintenance and operation of parks	230,000
" 10 Bonds	690,000
" 11 Administration and operation	2,210,000
" 12 Increase in equipment and rock stock-pile inventory	760,000
Gross disbursement	$ 39,940,000
Less federal grant-in-aid funds and forest highway funds	10,500,000
	$ 29,440,000
Less expenditure on collection of revenues	1,545,000
	$ 27,895,000
Less allotment to state police department	500,000
	$ 27,395,000
Less allotment to counties	3,500,000
	$ 23,895,000
Less allotment to cities	1,100,000
Net amount of state funds to be expended by State Highway Commission	$ 22,795,000

* Includes $3,400,000 of forest road expenditures by Public Roads Administration and $7,100,000 of federal funds to aid in construction of federal aid primary and federal aid secondary highways.

part to restore the depreciation in the ruptured pavements and part to add increased thickness to afford a capital investment to the standards required for this type of traffic.

Numerous examples of the above conditions could be given, among which are sections of the Crater Lake Highway, sections of the South Santiam Highway, sections of the Kings Valley Secondary, sections of the Cascade Secondary, et cetera.

Accompanying Tables IV and V illustrate proposed receipts and expenditures for the average of the next two calendar years.

TABLE V

Estimated Average Annual Receipts of Road-User, Federal Aid and Forest Highway Funds for the Calendar Years 1947 and 1948

	Annual Amounts
Motor vehicle license fees and operators' fees	$ 5,150,000
Gasoline tax	16,310,000
Diesel fuel tax	287,000
Motor transportation fees	2,965,000
Fines for traffic law violations	128,000
Astoria-Megler Ferry receipts	212,000
Receipts from rentals, discounts, etc.	30,000
Federal grant-in-aid funds	7,200,000
Federal forest highway funds	3,300,000
Gross receipts	$ 35,582,000
Less federal grant-in-aid funds and forest highway funds	10,500,000
	$ 25,082,000
Less revenues consumed in collection of revenues	1,545,000
	$ 23,537,000
Less revenues allotted to state police	500,000
	$ 23,037,000
Less revenues alloted to counties	3,500,000
	$ 19,537,000
Less revenues alloted to cities	1,100,000
Net amount of state revenue to be received by Highway Commission	$ 18,437,000
Deficit (excess of expenditure over current revenues)	$ 4,358,000

Unless revenues rise rapidly and the present federal grant-in-aid be continued, the proposed construction program cannot be maintained. Twenty-two million eight hundred thousand dollars represents the state income required to handle the

state highway program during each of the next two years. The net revenue to the Highway Department for the next biennium is estimated to yield annually $18,440,000, leaving a deficit of $4,360,000 per year to be met by a portion of $17,000,000 estimated to be on hand January 1, 1947, which amount was accumulated during the war years, due to restrictions on road construction by the Congress and the consequent inability of the Commission to expend such funds on needed highway construction projects.

As the state grows in population and wealth, road-tax revenues will increase and with that increase will come new demands for road betterment and extension; for instance, many more highways will need to be built for four lanes of traffic.

Needless to say, any reduction of revenue by reason of decrease in motor fees and taxes, reduction of present federal grant-in-aid funds, allocation of more funds to cities and counties, or the assumption of additional obligations such as would result from any material increase in mileage of roads and streets in the highway system will considerably delay, if not prevent, the completion of the state highway system of 7,200 miles and the 1,400 miles of county roads on the federal secondary system. If the people wish to get road improvements sooner or to allocate more road funds to the cities and counties the revenue must be increased. The present five cent gas tax is now worth 3.3 cents as far as effective road expenditures are concerned.

Section Two

REPORT

OF THE

State Highway Engineer

TO THE

State Highway Commission

OF THE

STATE OF OREGON

1945-1946

R. H. BALDOCK, State Highway Engineer

LETTER OF TRANSMITTAL

Salem, Oregon,
January 1, 1947.

To the Honorable State Highway Commission,
T. H. Banfield, Chairman,
Arthur W. Schaupp, Commissioner,
Ben R. Chandler, Commissioner.

Gentlemen:

I have the honor to submit to you herewith the report of the State Highway Engineer for the period July 1, 1944, to June 30, 1946.

Respectfully yours,
R. H. BALDOCK,
State Highway Engineer.

Section Two

REPORT OF THE

STATE HIGHWAY ENGINEER

TO THE

STATE HIGHWAY COMMISSION

1945-1946

INTRODUCTION

This portion of the biennial report has for its purpose the presentation of a brief outline of the various findings and activities of the Highway Department during the current biennium, together with such statistical information as is necessary for a proper understanding of the problems and activities of the Department. The section which immediately follows comprehends a presentation of the organization of the Highway Department, and a brief description of the duties of the various administrative and executive heads. Following this is a report on the progress made during the biennium in the improvement of state highways, which portion, in turn, is followed by reports of the various subdivisions of the highway department organization, as follows:

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Report of the Traffic Engineering Department	113
Report of the Legal and Right of Way Department	123
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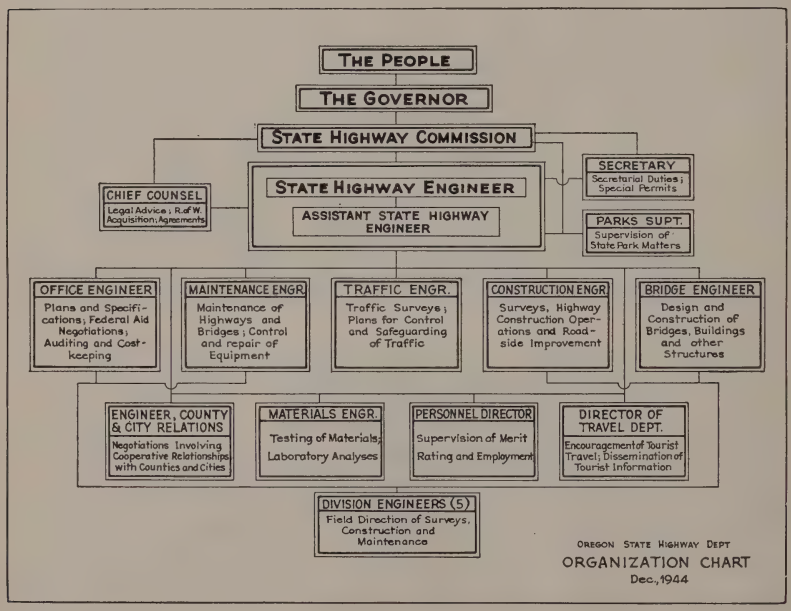
HIGHWAY DEPARTMENT ORGANIZATION

Administrative and Supervisory Organization

The administrative organization of the Highway Department consists of the State Highway Engineer, the Chief Counsel and the Secretary. The executive staff consists of the Office Engineer, the Maintenance Engineer, the Construction Engineer, the Bridge Engineer, the Traffic Engineer, the Parks Superintendent, the Materials Engineer, the County and City Relations Engineer, the Director of the Travel and Information Department, and the Personnel Director. The line or field organization consists of five Division Engineers with headquarters at Portland, Salem, Roseburg, Bend, and La Grande.

The integration of the organization is indicated by the chart given hereinbelow and the paragraphs descriptive of the departments of the various administrative and executive officers which follow:


THE PEOPLE
THE GOVERNOR
STATE HIGHWAY COMMISSION
CHIEF COUNSEL
Legal Advice; R. of W. Acquisition; Agreements
STATE HIGHWAY ENGINEER
ASSISTANT STATE HIGHWAY ENGINEER
SECRETARY
Secretarial Duties; Special Permits
PARKS SUPT.
Supervision of State Park Matters
OFFICE ENGINEER
Plans and Specifications; Federal Aid Negotiations; Auditing and Cost-keeping
MAINTENANCE ENGR.
Maintenance of Highways and Bridges; Control and repair of Equipment
TRAFFIC ENGR.
Traffic Surveys; Plans for Control and Safeguarding of Traffic
CONSTRUCTION ENGR.
Surveys, Highway Construction Operations and Roadside Improvement
BRIDGE ENGINEER
Design and Construction of Bridges, Buildings and other Structures
ENGINEER, COUNTY & CITY RELATIONS
Negotiations Involving Cooperative Relationships with Counties and Cities
MATERIALS ENGR.
Testing of Materials; Laboratory Analyses
PERSONNEL DIRECTOR
Supervision of Merit Rating and Employment
DIRECTOR OF TRAVEL DEPT.
Encouragement of Tourist Travel; Dissemination of Tourist Information
DIVISION ENGINEERS (5)
Field Direction of Surveys, Construction and Maintenance
OREGON STATE HIGHWAY DEPT
ORGANIZATION CHART
Dec., 1944

State Highway Engineer: The State Highway Engineer is the chief administrative official of the State Highway Depart-

ment. He has charge of and is responsible for the activities of all the subdepartments with the exception of the Legal and Right of Way Department and the office of the Secretary to the Commission.

Assistant State Highway Engineer: The Assistant State Highway Engineer is the acting head of the Department in the absence of the State Highway Engineer and, in addition, carries certain delegated portions of the administrative load. At present this position is unfilled.

Chief Counsel: The Chief Counsel acts as general counsel for the Highway Commission, has charge of all matters of a legal nature, and superintends the acquisition of property for rights of way, quarries, and other purposes. J. M. Devers is Chief Counsel for the Commission.

Secretary: The Secretary has charge of all details of a secretarial nature, including the preparation and compilation of the minutes of Commission meetings, the issuance of highway use permits, and Commission correspondence. H. B. Glaisyer is Secretary for the Highway Commission.

Office Engineer: The Office Engineer is in charge of the preparation of highway plans and specifications, federal aid negotiations, and accounting. S. H. Probert is Office Engineer.

Construction Engineer: The Construction Engineer supervises field engineering work involved in the locating, planning and constructing of highways, including economic surveys and project analyses. All contract work other than bridge and building construction is under his direction. H. G. Smith is Construction Engineer.

Maintenance Engineer: The Maintenance Engineer superintends the work of maintaining highways and bridges, and supervises the upkeep and operation of equipment owned by the Department. E. A. Collier is Maintenance Engineer.

Bridge Engineer: The Bridge Engineer supervises the design and construction of bridges, grade separations, buildings, and other major structures. G. S. Paxson is Bridge Engineer.

Traffic Engineer: The Traffic Engineer has charge of the problems involved in the direction and control of highway

traffic. He also directs a number of activities associated with highway planning. F. B. Crandall is Acting Traffic Engineer.

Parks Superintendent: The State Parks Superintendent directs the acquisition, operation, maintenance and improvement of state parks. He also is in charge of highway landscaping in roadside beautification. S. H. Boardman is the State Parks Superintendent.

Materials Engineer: The Materials Engineer has charge of the department testing laboratories and of the inspection of materials in the field. N. M. Finkbiner is Materials Engineer.

County and City Relations Engineer: The County and City Relations Engineer handles negotiations with county and city officials in matters involving cooperation between the Commission and the counties and cities. Oscar Cutler is County and City Relations Engineer.

Director of Travel and Information: The Director of the Travel and Information Division has charge of the Department's travel promotion campaign and the Division of Tourist Travel Information. Manley F. Robison is Director of this department.

Personnel Director: The Personnel Director attends to the keeping of merit rating records and to the handling of the many personnel matters involved in meeting the requirements of Civil Service. Duties of the Personnel Director are attended to by James McFarland.

Field Engineering Organization

In the performance of the field duties incidental to the supervision and direction of the construction, maintenance and operation of state highways, there are five Division Engineers reporting to the executive Staff Officers named above.

Each division engineer supervises and directs surveys, construction work and maintenance work on the state highways within his division. He acts as the local representative of the State Highway Department in dealing with county officers, contractors, and the public in general. In other words, the division engineers are line officers having direct charge of

the work, and the work is coordinated so as to bring about a uniformity in surveys, construction and maintenance by the staff officers, each of whom acts as the personal representative of the state highway engineer in his negotiations with the division engineers.

The maintenance is directed locally by 17 district maintenance superintendents, located within the five divisions, who have direct supervision of 130 section crews, each working under the direction of a section foreman. The maintenance superintendents also supervise the work of the extra gang crews in removing snow, removing slides, re-oiling surfacings, patching pavements, repairing bridges, etc., which work is largely seasonal in character. Their duties are, in general, to see that the proper materials and equipment are supplied, to supervise the work of the section crews and extra gangs, to keep an accurate account of the expense incurred, and in all respects to look after the upkeep of the highways within their respective territories.

When highway location surveys are to be made in a division, a locating engineer is assigned by the construction engineer to perform the work under the supervision of the division engineer. The construction projects are handled by resident construction engineers who are moved from one division to another as the distribution of the work may require. Each resident construction engineer is in charge of one or more contract jobs and his duties are to measure the quantities of work for which the contractor is entitled to payment, to inspect the workmanship and materials to insure compliance with the specifications, and to otherwise look after the interests of the State in connection with all matters concerned.

Division No. 1 is in charge of W. C. Williams, with headquarters in Portland. The division comprises the counties of Multnomah and Washington, and parts of Clackamas, Yamhill, Columbia, and Hood River.

Division No. 2 is in charge of F. D. Eason, with headquarters in Salem. It comprises the counties of Marion, Benton, Polk, Lincoln, Tillamook, and Clatsop, and parts of Columbia, Clackamas, Yamhill and Linn.

Division No. 3 is in charge of K. D. Lytle, with headquarters in Roseburg. It comprises the counties of Lane, Douglas, Coos, Curry, Josephine and Jackson.

Division No. 4 is in charge of W. E. Chandler, with headquarters in Bend. It comprises the counties of Wasco, Sherman, Jefferson, Crook, Deschutes, Klamath, and Lake, and parts of Linn, Hood River, Gilliam, Wheeler, and Harney.

Division No. 5 is in charge of Paul Van Scoy, with headquarters in La Grande. It comprises the counties of Morrow, Umatilla, Union, Wallowa, Baker, Malheur, and Grant, and parts of Gilliam, Wheeler, and Harney.

Equipment Department

Responsibility for the Highway Department's equipment, the present value of which is approximately $700,000, rests with the Equipment Department. Incidentally, the inventory value of equipment has been reduced approximately one-half by reason of inability to purchase new equipment since the beginning of the war. That department, in addition to exercising control over the purchase and distribution of equipment, operates the equipment repair shops and warehouses located at Salem, La Grande, Klamath Falls and Coquille. It, also, operates the storerooms through which the supplies for the various highway department operating units are handled.

The Equipment Department operates as a self-sustaining unit, making charges to the maintenance, construction and engineering units of the Highway Department for service rendered and supplies furnished. Charges for the use of equipment are made on a rental basis with adequate allowance for depreciation.

General supervision over the Equipment Department is exercised by E. A. Collier, Maintenance Engineer. Direct supervision of the work is in the hands of Emil F. Halik, Master Mechanic.

PROGRESS IN HIGHWAY IMPROVEMENT

General Summary

During 1945 and 1946 the State Highway Department has supervised construction work or improvement work on fifty-three projects which have been completed during that period. The projects completed during the biennium were distributed over the state-wide system of roads as follows: twenty-five projects were on the state primary system, seventeen were on the state secondary system, eight were located on county roads or city streets, outside the two state highway systems, and three affected both state and county road systems. The mileages of work accomplished under these fifty-three projects are as follows:

TABLE VI

Classification of Work	Primary Highways (Miles)	Secondary Highways (Miles)	Other Roads and Streets (Miles)
Bituminous paving	17.8	4.2	0.4
Bituminous macadam surfacing	16.0	7.2	0.3
Oil mat surfacing	49.3	71.7	24.7
Rock and gravel surfacing	65.5	62.5	13.2
Grading	61.2	49.3	9.5
Bridges (number of)	8.0	.....	1.0

At the close of 1946, the status of improvement of the two state highway systems under the jurisdiction of the State Highway Department is as follows:

TABLE VII

Type of Improvement	Primary Highways (Miles)	Secondary Highways (Miles)
Concrete pavement	315	41
Bituminous pavement	542	149
Bituminous macadam surface	1,218	59
Oil mat surface	2,293	1,057
Rock or gravel surface	244	656
Graded only	110	181
Unimproved	82	260
Totals	4,804	2,403

The status of improvement of each of the 55 primary state highways, of each of the 116 state secondary highways and of roads and streets other than state highways is shown in detail in Section Three of this report. The "unimproved" highways mentioned in Table VII include both (a) existing travelable routes on which no improvement with state funds has been made and (b) surveyed relocations of existing travelable roads which have not yet been reconstructed on improved alignment and grade. An analysis of Table VII, discloses that all of routes included in the two state highway systems, nearly 80 per cent of their aggregate length has reached the status of an oiled or higher type of riding surface.

The two-year period covered by this report has been one of abnormal and unsettled conditions, due partly to the prosecution of the recent war and in part to post-war readjustment problems. The improvement of the state highway systems has not progressed as rapidly as could be expected in normal times. However, in October of 1945, the Department began the awarding of construction contracts under federal aid and state post-war programs and has since awarded contracts for work estimated to cost $15,400,000. Construction progress by contractors has been below normal due to materials shortages and unsettled labor conditions, but never-the-less very creditable progress has been made.

A brief review of the major projects completed during 1945 and 1946, with emphasis placed on their contribution to the general improvement of the highway systems, is given below.

Primary State Highways

On the primary state highway system, the improvements made during the biennium are represented by completion of twenty-five projects involving seven new bridges and work on 135 miles of the system. These projects were located on thirteen of the fifty-five primary highways and in twelve of the thirty-six counties in the state.

Expenditures made during the biennium for construction activities on the state primary system amounted to $3,418,265.

A brief description of the major construction projects completed during 1945 and 1946 on the state primary system follows:

Pacific Highway, U. S. Nos. 99W, 99E and 99: On the Pacific Highway West (U. S. No. 99W), at the junction of Denver Avenue (Pacific Highway West) and the Schmeer Road at the north end of the bridge over Columbia Slough, a hazardous intersection has been improved by channelizing the Schmeer Road traffic separately from the main highway traffic. This has been accomplished by widening Denver Avenue for 600 feet on the east to provide for westbound and northbound traffic from the Schmeer Road, and by carrying southbound and eastbound traffic to the Schmeer Road by way of a separate roadway from Denver Avenue leading under the Columbia Slough Bridge. The improvement included concrete traffic dividers and concrete pedestrian walkways as required to provide positive control and protection to the traveling public and to pedestrians.

On the Pacific Highway East (U. S. No. 99E), three projects have been completed. At Woodburn, a congested traffic condition developed as a result of rapid building expansion along the highway, creating a hazardous situation due to narrowness of the main traveled highway. Through this section, 0.57 mile in length, new curbs have been constructed and the pavement widened and resurfaced to provide a width of sixty feet of asphaltic concrete pavement between curbs with proper provisions included for correcting a former drainage problem. The project also involved 0.6 mile of similar work on Young Street in Woodburn on the Hillsboro-Silverton Secondary Highway. Between Halsey and Harrisburg, the biennium has witnessed the completion of four new bridges, thus completing the improvement between these termini. The project was previously described in the report of 1943-44.

On that part of the Pacific Highway which extends southerly from Junction City (U. S. No. 99), two projects which materially improve the highway have been completed. From Judkins Point, just south of Eugene, to Springfield Junction the widening and repaving of 0.50 mile of highway now provides a modern four-lane highway between Eugene and Spring-

A section of U. S. 99 reconstructed north of Grave Creek, Josephine County.

The Jefferson Junction overpass on U. S. 99E north of Albany in Linn County.

field Junction. The second project completed on this highway lies between Coyote Creek (just south of the town of Wolf Creek) and Grave Creek. The project consisted of 4.4 miles of heavy grading and bituminous macadam surfacing, a triple 3′ x 10′ concrete box culvert at Coyote Creek and a 300-foot concrete bridge at Grave Creek. This improvement replaces a 5.8 miles section of narrow, winding roadbed and renders a distinct service in fast, safe transportation to the traveling public.

In addition to the completed projects as set forth above, construction on that portion of the Pacific Highway East (U. S. No. 99E), extending from the south end of the recently reconstructed and paved highway at Steiwer Hill, about 9.3 miles south of Salem, to the north end of the reconstructed concrete pavement near the Albany Airport, was begun in the spring of 1945. This work involves the grading and paving of 9.85 miles of new highway roadbed, the construction of a three-span steel arch type bridge over the Santiam River, and the construction of a 395-foot reinforced concrete bridge over the Southern Pacific Railroad. Completion of this section of highway will provide a 24-foot paved travelway from Salem to Albany and eliminate the narrow width and poor alignment previously experienced in traveling the old highway. The total estimated cost of this section of highway is $1,540,000.

Expenditures made during the biennium for construction work on the Pacific Highway (U. S. Nos. 99W, 99E and 99) amounted to $1,940,141.

Columbia River Highway and Old Oregon Trail, U. S. No. 30: On this route, two projects have been completed during the biennium. Sandy Boulevard in Portland, between 12th Street and 44th Street (a distance of 1.96 miles) has been resurfaced with asphaltic concrete to provide a smoother riding surface. Another step in the development of the new route of the Columbia River Highway between Troutdale and Wahkeena Creek has been completed by the grading of 2.42 miles of new highway roadbed, the construction of a small grade separation structure just east of the Sandy River and the construction

of large concrete box culverts at the crossings of Bridal Veil Creek and Wahkeena Creek. As a result of this improvement, the new water-level route from the Sandy River to a point in Benson Park near Wahkeena Creek, a distance of 13.2 miles, now requires 6.18 miles of hydraulic-placed embankments and 8.43 miles of roadbed topping to bring the entire length to condition suitable for permanent surfacing. Projects for the completion of the embankments and topping work were advertised for contracting twice, in December of 1945, and in June of 1946, but in both cases the few bids received were considered excessive and were rejected.

Easterly of Wahkeena Creek and extending to a connection with the present highway at Dodson, a distance of 4.5 miles, the new route is planned for construction as a Forest Road project under supervision of the U. S. Forest Service. This project was advertised by the Forest Service for construction

Grading underway on relocated U. S. 97 at Spring Creek Hill in Klamath County.

in 1946, but the bids received were also considered excessive and were rejected.

Expenditures for construction work on this route during the biennium amounted to $571,022.

The Dalles-California Highway, U. S. No. 97: The Madras-Juniper Butte Section, a 10.41 mile length of relocated highway, has been completed by the construction of a 3-inch bituminous macadam surfacing on the new roadbed which was graded in 1942. This new routing from Madras lies easterly of the old highway, in some places as much as 2¼ miles, and connects, at its south end, with the present highway about 2.7 miles south of Culver. The new route is on easy line and grade and saves 1.26 miles of travel distance.

A major improvement of the highway between Chemult and Modoc Point has been started in 1946 which will involve the construction of 35.9 miles of highway roadbed on new alignment and the construction of two structures. The proposed improvement includes a new highway location leaving the old highway 13.3 miles south of Chemult and approximately paralleling the Southern Pacific Company Railway; lying as much as eight miles east of the old highway at some points. This new route will eliminate the present Sun Mountain grade with its annual difficult snow removal problem, will lessen the travel distance by 3.7 miles and will materially reduce traffic hazards now existent on the old highway. During 1946, the Mazama Junction-Spring Creek Hill Section, the northerly 25 miles of the new route, has been graded, as has, also, the Spring Creek Hill-Lobert Section, the southerly 8.88 mile unit. Contracts are now underway for the grading of the Spring Creek Hill Section, 2.01 miles in length, for the Spring Creek Bridge and for a grade separation structure at the intersection of the new route with the north leg of the Chiloquin Secondary Highway. Completion of these projects is expected in the early part of 1947, and it is contemplated that the ensuing biennium will witness the surfacing of the project and its opening to public use.

Expenditures for construction on The Dalles-California Highway during the biennium amounted to $272,843.

Central Oregon Highway, U. S. No. 28: Between Buchanan and Juntura, a 34.15 mile section of highway has been im-

A 34-mile section on U. S. 20 east of Burns. Resurfaced and oiled during 1946.

proved by the strengthening of the existing surface with a 4-inch lift of keyed rock base and the construction of a 1¼-inch oil mat wearing surface. The improvement was made at a cost of $450,000.

Oregon Coast Highway, U. S. No. 101: Two relatively short, but important sections of this highway have been improved during the biennium, one at Nelscott and the other at Oceanlake. The Nelscott improvement consisted of widening of 0.21 mile of the highway, the construction of traffic islands for the guidance and separation of traffic to and from the beach resort, and the construction of a service roadway apart from the main highway to permit traffic to patronize business houses without interferring with or being endangered by the flow of through traffic on the highway. At Oceanlake, the increasing congestion of vehicles and pedestrians along the main business street and the rapid suburban developments to the north thereof intensified the need for correction of an existing hazardous condition and justified the improvement

of alignment at the north entrance to Oceanlake and the widening of surfacing throughout. The project, 1.19 miles in length, provides a four-lane divided traveling width with additional parking lanes on each side. The project also provides channelization of traffic for major left-turn movements, and illuminated paved center refuges for pedestrian safety. The center median strips dividing opposing traffic lanes is being planted to shrubbery to discourage pedestrians crossing the highway elsewhere than at intersections.

Expenditures for construction on the Oregon Coast Highway during the biennium amounted to $445,045.

Baker-Homestead Highway, Oregon No. 86: During the biennium, the completion of 2.52 miles of grading, surfacing and oiling on the Ruckles Creek-Middle Bridge Section now provides a relocated route constructed to modern standards from Baker to a point 6.5 miles east of Richland, a distance of 49.3 miles. The construction cost of the Ruckles Creek-Middle Bridge improvement was $112,000.

Santiam Highway, U. S. No. 20: The biennium has witnessed the performance of 11.59 miles of rock surfacing, 11.59 miles of oil treatment and 14.54 miles of asphaltic concrete paving on the Santiam Highway. Between Albany and Crabtree Corner, a 1.33 mile unit of 18-foot oiled highway was widened to provide a 22-foot travelway and was given a 3-inch lift of asphaltic concrete. On the remaining 5.21 mile unit, the existing 22-foot travelway was repaved with from two to three inches of asphaltic concrete, thus strengthening the section to support the extraordinarily heavy loads imposed upon it by log hauling operations. From the south corporate limit of Lebanon easterly for eight miles, the existing surfacing was resurfaced with a 3-inch lift of asphaltic concrete to strengthen the travelway which is subjected to heavy hauling activities. On the Foster-Canyon Creek Section, the highway has been improved for a distance of 11.59 miles by the stabilizing and strengthening of the old surfacing and by the construction of a 20-foot oil mat wearing surface thereon.

During the biennium, the amount of $361,272 has been expended for construction on the Santiam Highway.

Willamette Highway, Oregon No. 58: At the crossing of Duval Creek, about ten miles west of Oakridge, an old bridge structure has been replaced with a new 96-foot frame trestle bridge of greater width and higher load carrying capacity. The construction cost was $8,000.

Crater Lake Highway, Oregon No. 62: The major improvement made on this highway was the widening of the reinforced concrete bridge over the Rogue River at Trail. However, a short section of the highway extending from Fort Klamath southeasterly for 0.4 mile was resurfaced and reoiled, the work being occasioned by failure of the roadbed to stand up under the heavy log hauling to which the roadway was subjected during war-time timber producing activities. The project under which this reconstruction work was performed is the Crater Lake-Fort Klamath Timber Access Road Project which is also hereinafter described under the headings "Secondary State Highways" and "County Roads".

Construction expenditures on the Crater Lake Highway during the biennium amounted to $24,959.

Sunset Highway, Oregon No. 2: During the biennium, two projects on the remaining uncompleted portion of the Sunset Highway (formerly the Wolf Creek Highway) have been completed. The uncompleted part of the highway extends from Davies (about 9.2 miles northerly of Forest Grove) easterly to the Multnomah County Line near Sylvan, a distance along the new route of 22.1 miles. Contracts for the grading, structures, surfacing and paving of the westerly 19.4 miles have been awarded during the biennium and, in that period, the grading of the North Plains-Gardner Ranch Section and of the Berger Ranch-Barnes Road Section (aggregating 7.3 miles in length) has been completed. The contract for the completion of the 2.7 mile unit at the east end of the highway is planned for letting in the early part of 1947, and the entire highway is expected to be completed by the end of 1947. Upon completion, the section from Davies easterly will provide a 24-foot bituminous macadam travelway to North Plains (the future junction point with the Wilson River Highway), a 24-foot asphaltic concrete pavement from North Plains

to the Barnes Road intersection, and a 48-foot divided travelway from that point to the east terminus. Grade separation structures are provided at the S. P. & S. Railway crossing near North Plains, at the Mountaindale County Road crossing, at the Oregon Electric Railway crossing near Merle, at the intersection with the proposed Cedar Hills Suburban development and at the junction with the Tualatin Valley Highway.

The estimated cost of work contracted on the Sunset Highway during the biennium is $740,000.

Warm Springs Highway: Between Mill Creek and Miller Flat, the proposed ultimate development of the highway has been advanced by the completion of 8.06 miles of roadbed grading to modern highway standards. This route is now oiled from its south terminus at Madras northerly to the Warm Springs Agency, a distance of 14.5 miles; and is graded for an additional 24.9 miles from that point northerly to the forest boundary, seven miles south of the northerly terminus. A bridge over Mill Creek is yet to be constructed under the supervision of the Highway Department as is, also, the surfacing and oiling of the 24.9 mile present graded roadbed. The northerly seven miles are to be graded and surfaced as a Forest Road project under supervision of the U. S. Forest Service.

Expenditures for construction on this highway during the biennium amounted to $95,560.

Secondary State Highways

During the biennium, improvements made on the secondary state highway system came about under seventeen construction projects affecting 117 miles of the system. These projects were located on sixteen of the one hundred sixteen secondary highways and in seventeen of the thirty-six counties in the state.

A brief description of some of the major improvements made during the biennium on the secondary state highway system follows:

On the Nehalem Highway in Clatsop County, 1.95 miles of grading and surfacing, and 3.58 miles of asphaltic concrete

paving were performed on the Astoria-Naval Hospital Section. This improvement was undertaken to provide for heavy travel to the new naval hospital, and served to improve the alignment, width and grade of the old highway. The project also included the channelization of traffic at the northwest terminus of the highway near the Youngs Bay Bridge on the Oregon Coast Highway. Also, on this highway, the Banzer Bridge-Mist Section in Columbia County has been improved on new modern alignment and grade involving 2.82 miles of grading and surfacing and 3.20 miles of bituminous macadam wearing surface.

On the Farmington Highway in Washington County, 4.65 miles of regrading, surfacing and oiling were performed to improve the width, grade and strength of the roadbed.

Between Roots Creek and Siletz on the Siletz Highway in Lincoln County, an 11.10 mile section of the road was resurfaced to strengthen the roadway for the heavy log hauling to which it is now subjected.

On the Dallas-Coast Highway in Polk County, two sections have been improved on new alignment and modern standards; comprising a short section at Buell and the section between Salt Creek and Dolph Corner. The aggregate length of 4.02 miles has been graded, surfaced and provided with a bituminous macadam travelway. The improvement shortens the travel distance by 0.36 mile and brings the highway to a satisfactory status continuously from Dolph Corner, about three miles northwest of Dallas, to the junction with the Salmon River Highway, a total distance of 11.8 miles.

On the Monmouth Highway, state forces have oiled the 6.75 mile section which extends from Monmouth westerly to a junction with the Kings Valley Highway.

Between Woodworth Acres and Parkdale on the Hood River Highway in Hood River County, the stage improvement of the highway as a whole has been advanced by the grading, surfacing and oiling of a 2.20 mile section to improved width, line and grade.

A 3.37 mile section of the Shaniko-Fossil Highway in Wheeler County, between Porcupine Butte and Chichester

Gulch has been improved by new grading and the placing of a rock wearing surface.

On the Wasco-Heppner Highway in Morrow County, 4.64 miles of regrading and 11.56 miles of surfacing and oiling have been performed on the Gilliam County Line-Eightmile Section, improving sight distance and increasing the width and stability of the roadway in the interests of safety and convenience to the traveling public.

In Umatilla County, on the Weston-Elgin Highway, the Weston Mountain-McDougal Section has been improved by the grading, surfacing and oiling of 8.00 miles of roadway.

The Madras-Prineville Highway in Jefferson and Crook Counties has experienced definite improvement during the biennium with the completion of two projects, involving 14.86 miles of grading and 4.95 miles of topping. This work has completed the grading on new alignment of the whole of this highway. The construction of a railroad grade separation structure and the surfacing and oiling of the entire distance between Madras and Prineville (26.32 miles) is now under contract and expected to be completed in the early part of 1947.

In Klamath County, on the Klamath Lake Highway, 0.06 mile of grading, 2.48 miles of rock surfacing and 0.07 mile of oiling work was performed in conditioning a section extending west from Fort Klamath for heavy log hauling activities occasioned by war-time demands. This improvement is a part of the Crater Lake-Fort Klamath Timber Access Road Project which is also hereinafter described under the heading "County Roads".

The biennium has witnessed the completion of the I. O. N. Highway in Malheur County to an oiled status throughout with the completion of 2.26 miles of grading, surfacing and oiling on the State Line—Molloy Ranch Section at the north end of the route. The re-oiling of a 34.57 mile section between the Flight Strip south of Rome and the state line at McDermitt was also undertaken and completed, serving to stabilize and improve the original light oil treatment which had been applied as a dust palliative during the initial construction of the route.

Expenditures made for construction on the secondary highway system during the biennium totaled $2,486,808.

County Roads

During the biennium, ten projects located in eight counties were contracted and completed under state supervision on county roads and other roads and streets lying outside of the primary and secondary state highway systems. Five of these projects were constructed at the request of the federal government in connection with war activities, the others being undertaken at the request of and in cooperation with the cities and counties involved.

A brief summary of the more important improvements made under these county road projects is as follows:

In Columbia County, 3.70 miles of surfacing and oiling work was performed on the Clatskanie Army Works Access Road Project, which improved a county road system route from Inglis on the Columbia River Highway northerly via Quincy and Locods to Bradbury Slough of the Columbia River.

In Deschutes County, 9.48 miles of oiling work was performed on the Alfalfa Market Road extending from the Powell Butte Secondary Highway, east of Bend, easterly to the town of Alfalfa.

In Douglas County, the accelerated use of the North Umpqua Road as an outlet for timber led to the contracting of the Roseburg Access Road Project on that route. Under this project, 0.17 mile of grading and paving was performed, a new bridge over Deer Creek was built, and channelization of traffic at the north entrance to Roseburg on the Pacific Highway was effected. The improvement as a whole routes the heavy logging traffic from the County Road safely through Roseburg and provides channelized junctions for the safe handling of traffic at the intersections of the County Road with the Pacific Highway.

In Klamath County, 0.34 mile of grading and bituminous macadam surfacing was performed on the Klamath Falls-Marine Barracks Access Road. This improvement widened and made serviceable the extension of Main Street in Klamath

Falls from the crossing of the U. S. R. S. Canal northeasterly to the city limits, connecting with the federally constructed portion of the road at that point.

Also, in Klamath County, as a part of the Crater Lake-Forest Boundary Timber Access Project (partially described hereinbefore under the two state highway system accounts), 4.72 miles of grading work and 1.59 miles of rock surfacing was performed on county and forest roads lying northerly and easterly of the Seven Mile Ranger Station (west of Fort Klamath). This work was performed to give an outlet for war-emergency timber, and serves also as an improvement to the county and forest road systems.

In Multnomah County, 0.21 mile of grading and 0.17 mile of asphaltic concrete paving was performed on the Schmeer County Road in conjunction with the improvement of the Pacific Highway West in that vicinity, as hereinbefore more fully described under "Primary State Highways".

In Union County, state forces performed 0.25 mile of surfacing and 4.65 miles of oiling on the North Powder-Davis Ranch Section of the North Powder River County Road, a section previously improved in cooperation with the federal government.

In Wasco County, 4.06 miles of regrading, and 6.91 miles of surfacing and oiling were performed in cooperation with the federal government on the Mill Creek Forks-The Dalles Section of the Mill Creek County Road. This improvement has been constructed to high standards, and contributes to the progress being made in modernizing the county road systems.

Expenditures made during the biennium for construction of the various projects on roads and streets not on either of the two state highway systems amounted to $186,962.

There were 49 miles of U. S. 20 east of Hampton contracted for re-oiling in 1946.

Easy grades are found on U. S. 99 over the summit of the Siskiyou Mountains in Jackson County.

CLASSES OF HIGHWAYS

The classes of highways with which the Highway Commission is normally concerned, and in connection with which it normally expends the state and federal funds which are entrusted to it, are as follows:

1. Primary State Highways.
2. Secondary State Highways.
3. Primary Federal Aid Highways.
4. Secondary Federal Aid Highways.
5. Public Lands Highways.
6. Federal Forest Highways.
7. County Roads.

Classification of highways as above indicated is made necessary by the several plans of highway financing that have been developed during the years by the State and Federal Government. Each plan of financing limits itself to particular highways or kinds of highways and thus establishes a new classification. It is possible for a highway to be in two or more classes. For instance, a primary state highway may also be a primary federal aid highway. Likewise, a road may be both a county road and a secondary federal aid highway.

Brief descriptions of these several different classes of highways are given in the paragraphs which follow:

Primary and Secondary State Highways. State Highways are those highways for which the State has assumed the responsibilities of maintenance and improvement. In the beginning, all state highways were of the same class, but when the point was reached where the system included a complete network of the main arterial highways, it became desirable to have a separate system for highways which serve as feeders to the main network rather than as main lines. The main arterial system was, therefore, designated the Primary State Highway System, and a second system, called the Secondary State Highway System, was set up to receive such additional highways as might not be considered of sufficient importance to justify inclusion in the Primary System.

Additions to the Primary System may be made by the state legislature or by the State Highway Commission. Additions to the Secondary System may be made by joint action of the State Highway Commission and the County Court of the county in which the highway is situated. The conditions under which state moneys may be expended on primary and secondary highways are the same for both classes. Counties bear no financial responsibility for the maintenance or improvement of either class.

The present mileage of Primary Highways is 4,804. The present mileage of Secondary Highways is 2,403. Complete listings of the highways included in the primary and secondary systems are given in Tables 28 to 31 in Section Three of this report. A small scale map showing the highways which comprise the two systems is also included in Section Three.

Listings of expenditures made on the primary and secondary highways appear in Tables 11 to 16, inclusive, in Section Three.

Primary Federal Aid Highways. The Primary Federal Aid System of highways comprises those highways which have

Extra width pavement over crest of Sexton Mountain on U. S. 99 north of Grants Pass.

been designated under authority of the Federal Highway Act of 1921 as highways eligible to have primary federal aid funds expended upon them. The highways in this system are selected and designated by mutual agreement between the Highway Commission and the Federal Public Roads Administration. The total mileage of highways of this class is limited to 8 per cent of the total mileage of public roads in existence in 1921, which places the limit for the State of Oregon at 3,346.1 miles, exclusive of miles within national forests and other federal reservations and exclusive of miles within cities. The total mileage in the system at present is 3,287.9 miles, plus 522.7 miles which are within national forests and reservations and 134.4 miles within cities having populations of 2,500 or more.

Primary federal aid funds allotted to the State of Oregon for use on primary federal aid highways for the fiscal years 1939 to 1947 were as follows:

Fiscal year 1939	$2,048,413
Fiscal year 1940	1,638,823
Fiscal year 1941	1,884,937
Fiscal year 1942	1,647,906
Fiscal year 1943	1,649,132
Fiscal year 1944	None
Fiscal year 1945	None
Fiscal year 1946	4,539,781*
Fiscal year 1947	4,539,276*

* Includes $810,873 of urban area funds.

A complete listing of the Primary Federal Aid Highways in Oregon is given in Table VIII in Section Two of this report.

Secondary Federal Aid Highways. The federal aid road act adopted by Congress during the session of 1944 amended the federal act of 1936 which created a federal aid secondary highway and feeder road system.

The federal act of 1936 provided for a feeder road and secondary system which would equal 10 per cent of the rural road mileage of the state. The mileage available to the state under the terms of this act was 4,933, and there was recommended to the Public Roads Administration a system of 1,148 miles, which was approved.

Under the terms of the act of 1944 the 1936 law was amended, and no limitation was placed upon the mileage which could be included in the system, except that the mileage in the initially

selected system should be no greater than could be improved within a reasonable period of time. The federal act of 1936 provided that the roads to be included in the system should be by cooperative agreement between the State Highway Commission and the Commissioner of Public Roads. The act of 1944 provides that the roads to be included in the system shall be as agreed upon by the local authorities, which in the State

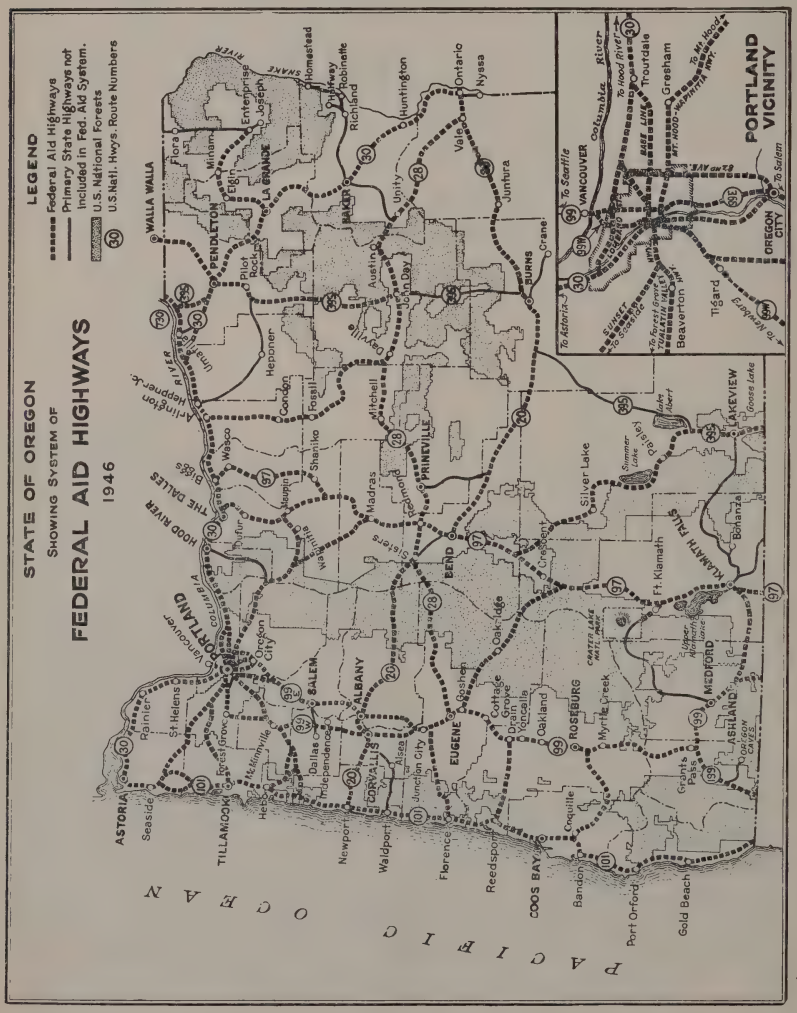


TABLE VIII

Primary Federal Aid Highway System

Federal Route No.	Highway	Total Federal Aid Mileage Inclusive of Miles Within Cities and Reservations	Mileage Within Cities of 2,500 or More	Mileage Within National Forests	Mileage Within Indian Reservations	Total Federal Aid Mileage Exclusive of Miles Within Cities and Reservations
1	Astoria to Ontario	511.33	31.89	29.55	*24.44	425.45
2	Oregon Coast Highway	394.02	10.24	46.38	† 0.29	337.11
3	Pacific Highway	337.85	23.12	7.53	.....	307.20
4	The Dalles-California Highway	279.47	4.73	19.46	50.10	205.18
5	Eugene to Ontario	385.00	.....	86.01	.....	298.99
6	Arlington to Rock Creek	123.63	.....	.....	.....	123.63
7	La Grande to Enterprise	66.25	0.46	.....	.....	65.79
8	Heppner Junction to Pendleton‡	.....	.....	.....	.....	.....
9	Pacific Highway West	116.04	13.34	.....	.....	102.70
10	Albany-Corvallis Highway	10.50	0.65	.....	.....	9.85
11	McMinnville-Tillamook Highway	48.68	.....	13.44	.....	35.24
12	Sherman Highway	69.00	.....	.....	.....	69.00
13	Ft. Klamath to Crater Lake‡	.....	.....	.....	.....	.....
14	Coos Bay-Roseburg Highway	61.81	0.29	.....	.....	61.52
15	Green Springs Highway	56.34	0.98	1.57	.....	53.79
16	Fremont Highway	158.23	.....	14.25	.....	143.98
17	Redwood Highway	42.34	.....	0.93	.....	41.41
18	Boardman to Wallula	39.49	.....	.....	.....	39.49
19	Pendleton to Washington State Line	36.60	.....	.....	.....	36.60
20	Umpqua Highway	50.13	.....	0.57	.....	49.56
21	Bend to Burns	131.71	2.59	.....	.....	129.12
22	Corvallis-Newport Highway	56.91	0.99	.....	.....	55.92
23	Salmon River Highway	21.92	.....	.....	.....	21.92
24	Portland to Maupin	99.21	6.69	37.04	.....	55.48
25	Siuslaw Highway	67.32	.....	17.60	.....	49.72
26	East Portland-Oregon City	19.51	9.36	.....	.....	10.15
27	Wolf Creek Highway	65.52	2.31	.....	.....	63.21
28	Cannon Beach Road	20.96	.....	.....	.....	20.96
29	Willamette Highway	87.17	.....	64.12	.....	23.05
30	Pendleton to John Day	122.15	1.73	16.67	.....	103.75
31	Burns to Vale	114.97	1.01	.....	.....	113.96
32	Tualatin Valley Highway	42.36	1.82	.....	.....	40.54
33	Klamath Falls-Weed Highway	14.30	.....	.....	.....	14.30
34	Boyer to Dolph	5.60	.....	4.90	.....	0.70
35	Tillamook to Banks	54.32	0.48	.....	.....	53.84
36	Pendleton to Cold Springs	18.50	.....	.....	.....	18.50
37	Santiam Highway	101.30	0.48	53.53	.....	47.29
38	Fourth Street entrance to Portland§	.....	.....	.....	.....	.....
39	Base Line Road	13.00	4.58	.....	.....	8.42
40	Lombard Street	10.90	7.90	.....	.....	3.00
41	82nd Avenue	13.80	6.20	.....	.....	7.60
42	West Portland-Hubbard Highway	17.50	.....	.....	.....	17.50
43	Front Avenue, Portland	2.60	2.60	.....	.....	.....
44	Warm Springs Highway	46.40	.....	7.00	27.00	12.40
	Totals	3,934.64	134.44	420.55	101.83	3,277.82

* Includes 2.20 miles in Celilo Canal Reserve.

† Cape Perpetua Lighthouse Reserve.

‡ Withdrawn from Federal Aid System.

§ Included in Route No. 9.

of Oregon are the county courts, the State Highway Commission, and the Commissioner of Public Roads.

Soon after the act of 1944 was approved, the Highway Department undertook a study to determine the highways and county roads that could be considered for inclusion in the secondary and feeder road system.

Of first importance in the selection of the system was to determine the number of miles that could be constructed within a reasonable period of time. Based upon the probable revenues that might be available, it was determined that approximately 5,000 miles should be in the initial system.

It was at once evident that it would be advantageous to include in the federal secondary and feeder road system all of the mileage of state primary highways and all of the mileage of state secondary highways which were not a part of the primary federal aid system, because if not included they would not be eligible for federal funds and their construction and reconstruction could not be carried forward with a reasonable expectation of being completed.

The mileages of state primary highways and state secondary highways that are not included in the primary federal aid system are not evenly distributed throughout the counties, and to attempt to allocate a system of federal secondary and feeder roads in each county on the basis that the federal secondary and feeder road funds are apportioned to the state, one-third rural population, one-third post road mileage, and one-third area, was not equitable. It was, therefore, determined that there should be approximately 1,700 miles of county roads, and the allocation of the mileage to each county should be based on the formula which is used in determining the apportionment of federal secondary and feeder road funds.

The county officials were then called into consultation, and their recommendations were requested as to what county roads in each county should be recommended for inclusion. The county officials agreed that the primary state highway mileage and the secondary state highway mileage not a part of the federal aid primary system should be included, and also agreed that 1,700 miles of county roads were equitable and fair. As

a result of this method of allocation, there are county roads in each county included in the system.

Following these conferences with the county officials, the State Highway Commission recommended to the Public Roads Administration a system of 5,080.88 miles, of which 926.01 were state primary highways, 2,394.57 state secondary highways, and 1,760.30 county roads.

The Public Roads Administration reviewed this recommendation, and as of January 29, 1945, gave official approval to 885.57 miles of primary state highways, 2,154.15 miles of secondary state highways, and 1,370.45 miles of county roads, or a total of 4,410.17 miles. The highways and roads not approved by the Public Roads Administration were not definitely eliminated from the proposed system, but were merely deferred for future consideration. The approved mileage creates a well-balanced system of secondary and feeder roads, the construction of which can be carried forward with funds that can reasonably be expected within the next 15 years, and the roads deferred for future consideration by the Public Roads Administration will be given study and as the need for their improvement becomes evident and analyses of the relative benefits are completed additional mileages may be added from time to time.

On September 30, 1946, a slight revision was made in the system by reason of a change in the McNary Dam-Echo Secondary Highway No. 462. This revision reduced the mileage in the approved system 1.08 miles, making the total approved system 4,409.09 miles.

A list of the federal secondary and feeder roads which have been approved for inclusion in this system is given in Table IX in Section Two of this report.

Federal aid funds allotted to the State of Oregon for use on secondary federal aid highways for the fiscal years 1939 to 1947 were as follows:

Fiscal year 1939	$ 409,683
Fiscal year 1940	245,823
Fiscal year 1941	245,861
Fiscal year 1942	288,383
Fiscal year 1943	288,598
Fiscal year 1944	None
Fiscal year 1945	None
Fiscal year 1946	2,544,582
Fiscal year 1947	2,544,245

TABLE IX

Secondary Federal Aid Highway System

The mileages given in this table are inclusive of mileages within cities, towns and urban areas.

F. A. S. No.	Name	Termini	Length in Miles
1	Nehalem	Astoria-FA 27 near Buxton	76.15
2	Warrenton-Ft. Stevens	FA 2 in Warrenton-Ft. Stevens	4.50
3	Fishhawk Falls	FA 27 near Elsie-FAS 1 west of Jewell	5.86
4	Mist-Clatskanie	FAS 1 at Mist-FA 1 at Clatskanie	11.90
5	Warrenton-Chapman Street	FA 2 in Warrenton-FAS 2 in Warrenton	1.80
6	Elsie-Jewell	FA 27 near Elsie-FAS 1 at Jewell	8.70
8	Youngs Bay-Melville	FA 2 near Astoria-Melville	7.20
9	Pittsburg-Scappoose	FAS 1 at Pittsburg-FA 1 at Scappoose	21.00
10	Inglis-Mayger	FA 1 near Quincy-Mayger	4.40
12	Treharne-Sunset Camp	FA 27 at Sunset Camp-FAS at Treharne	9.50
14	Little Nestucca	FA 2 near Cloverdale-FA 11 at Dolph	9.40
15	Miami-Barnsdale School	FA 2 at Garibaldi-Barnsdale	7.60
16	Netarts	FA 2 at Tillamook-Oceanside	9.15
18	Hemlock-Sand Lake	FA 2 at Hemlock-Sand Lake	5.90
19	Peltz Corner-Trask River	FA 2 near Tillamook-FAS 20	2.00
20	Fairview-Clements Corner	FA 2 south of Tillamook-FA 35 east of Tillamook	5.50
21	Coast Highway-Pacific City-Woods	FA 2 south of Cloverdale-Woods	3.70
22	Beaverton-Aurora	FA 3 at Aurora-FAS 25 at Beaverton	20.81
23	Nehalem	FA 27 near Buxton-FA 32 at Forest Grove	9.24
24	Forest Grove-Balm Grove	FA 32 at Forest Grove-FA 35 near Gales Creek	9.30
25	Beaverton-Hillsdale	FA 32 at Beaverton-FA 9 in Portland	6.72
26	Farmington	FAS 50 south of Hillsboro-FAS 22 in Beaverton	9.89
27	Scholls	FAS 50 at Scholls-FAS 25 near Beaverton	12.40
29	Hillsboro-North Plains-Shadybrook	FA 32 in Hillsboro-Shadybrook	8.80
31	Cornelius-Blooming	FA 32 at Cornelius-1 mile south of Blooming	3.70
32	Hillsboro-Cornelius Pass	FA 32 in Hillsboro-FA 1 near Burlington	14.10
33	Hillsboro-Farmington- North Scholls	FAS 27 near N. Scholls-FA 32 nr. Hillsboro	8.20
34	Six Corners-Sherwood-Tualatin	FA 9 at Six Corners-FAS 22 at Tualatin	5.00
35	Cedar Mill	FA 27 near Orenco-FA 1 in Portland	8.80
37	Sun Dial	FA 1 at Fairview-Sun Dial Lake	1.25
38	N. E. Glisan Street	FA 41 in Portland—Base Line Road south of Troutdale	9.70
39	S. E. Foster Road	FA 41 in Portland-FAS 129 at Damascus	9.00
43	Sauvies Island (West Side)	FA 1 south of Burlington-FAS 44 east of Burlington	2.50
44	Sauvies Island (Central)	FAS 43 east of Burlington-FAS 43 south of Burlington	10.40
45	Sauvies Island (Oak Island)	FAS 44 east of Burlington-north end Little Sturgeon Lake	3.00
50	Hillsboro-Newberg	FA 32 in Hillsboro-FA 9 in Newberg	21.04
100	Three Mile Lane	FA 9 in McMinnville-FA 9 at Dayton Junction	8.46
101	Yamhill-Newberg	FA 9 in Newberg-FA 32 in Yamhill	11.65
102	Newberg-Silverton	FA 9 in Newberg-FAS 147 in Silverton	31.15
103	Bellevue-Hopewell	FA 11 at Bellevue-FAS 116 east of Hopewell	14.89
104	Lafayette	FAS 103 north of Hopewell-FAS 105 west of Dayton	5.75

TABLE IX—Continued

F. A. S. No.	Name	Termini	Length in Miles
105	Amity-Dayton	FAS 9 north of Amity-FAS 100 west of Dayton	7.03
108	Springbrook-Chehalem Mt.	FA 9 east of Newberg-FAS 50 northwest of Springbrook	3.00
109	Carlton-Chehalem Creek	FA 32 in Carlton-FAS 101 northwest of Newberg	5.20
110	Pike-Yamhill	FA 32 in Yamhill-Pike	4.90
111	Carlton-McMinnville	FAS 112 near McMinnville-FA 32 in Carlton	6.30
112	Baker Creek- McMinnville	FA 9 in McMinnville-Baker Creek	6.30
113	Gopher Valley	FA 11 east of Sheridan-Gopher Valley	4.50
114	Willamina-Coast Creek	FA 11 in Willamina-Coast Creek	6.30
115	Mt. Hood	FA 24 near Government Camp-FA 1 at Hood River	44.80
116	Salem-Dayton	FAS 123 at West Salem-FAS 100 in Dayton	20.10
117	Canby-Marquam	FA 3 at Canby-FAS 140 west of Molalla	8.02
118	Liberal-Mollala-Wilhoit	FAS 147 at Liberal-Wilhoit	9.00
119	Milwaukie-Gladstone	FA 41 in Gladstone-Milwaukie	5.90
120	West Linn-Oswego-Wilsonville Road	FA 3 in West Linn-FAS 122 southwest of Oswego	5.10
121	North Santiam	FAS 127 west of Shaw-FA 37 at Santiam Junction	77.38
122	Oswego-Wilsonville-Newberg	FA 3 at Oswego-FA 9 east of Newberg	23.90
123	Salem-Dallas	FAS 190 in Dallas-FA 3 in Salem	14.92
124	Mehama-Mill City	FAS 121 at Mehama-FAS 121 at Mill City	8.83
125	Jefferson	FA 3 north of Jefferson-FA 3 south of Jefferson	8.60
126	Greensbridge-Scio	FAS 125 at Jefferson-FAS 220 at Scio	9.20
127	Silver Creek Falls	FA 3 in Salem-FAS 147 in Silverton	40.82
128	Yergen Corner-Aurora	FAS 102 south of Newberg-FAS 22 at Aurora	11.90
129	Clackamas-Boring	FA 41 at Clackamas-FA 24 near Sandy	12.80
130	Silverton-Sublimity	FAS 121 at Sublimity-FAS 147 at Silverton	13.20
131	Parkplace-Springwater	FA 41 at Parkplace-FAS 140 near Estacada	17.20
132	Rock Creek-Eagle Creek	FAS 129 near Rock Creek-FAS 141 at Eagle Creek	9.80
137	Dallas-Coast	FA 11 near Valley Junction-FAS 123 in Dallas	15.19
138	Monmouth-Independence	FA 9 in Monmouth-FAS 142 in Independence	2.37
139	Monmouth	FAS 190 near Dallas-FA 9 at Monmouth	7.20
140	Woodburn-Sandy	FA 3 near Woodburn-FA 24 near Sandy	48.49
141	Eagle Creek-Sandy	FAS 140 near Eagle Creek-FA 24 at Sandy	7.68
142	Independence	FAS 176 in Independence-FAS 123 near Eola	6.38
144	Alsea	FA 2 at Waldport-FA 22 near Philomath	59.11
145	Eddyville-Blodgett	FA 22 near Blodgett-Nashville	7.27
146	Otis-Rose Lodge	FA 2 at Otis-FA 23 at Rose Lodge	4.10
147	Salem-Oregon City	FA 3 near Salem-FA 26 at Oregon City	42.15
149	Schooner Creek	FA 2 at Taft-Schooner Creek	2.50
150	Siletz-Orton	FAS 196 at Siletz-Orton	8.00
151	Burnt Woods-Harlan	FA 22 at Burnt Woods-Harlan	8.50
152	Yachats River	FA 2 at Yachats-Yachats River	6.50
159	Salem-Brassel Corner	FA 123 in Salem-FAS 102 near Woodburn	16.60
176	Salem-Independence	FA 3 in Salem-FAS 193 in Independence	11.00
190	Kings Valley	FA 22 near Wren-FAS 123 in Dallas	28.05
193	Granger	FA 10 near Albany-FAS 138 in Independence	18.60
196	Siletz	FA 22 near Toledo-FA 2 at Kernville	31.86

TABLE IX—Continued

F. A. S. No.	Name	Termini	Length in Miles
200	Monroe-Cheshire	FA 9 in Monroe-FA 25 at Cheshire	8.66
201	Cheshire-Hadleyville	FA 25 near Cheshire-Hadleyville	15.58
202	Corvallis-Eastside	FA 9 in Corvallis-FA 3 at Albany	10.19
205	Granger-Wells	FA 10 at Granger-FAS 193 near Wells	5.60
206	Greenberry-Beaver Creek	FA 9 near Greenberry-Beaver Creek	5.50
207	Bellfountain-Dawson	FA 9 near Monroe-Dawson	6.40
208	Albany Airport	FA 37 near Albany-FA 3 at Albany Airport	1.07
210	Eugene-Harrisburg	FA 3 in Eugene-FA 3 in Harrisburg	20.10
212	Crabtree Corner-Lebanon	FA 37 in Lebanon-FAS 220 near Crabtree	8.20
213	Brewster-Lacomb	FAS 212 near Lebanon-Lacomb	6.70
214	Lebanon-Berlin	FAS 212 near Lebanon-Berlin	9.00
215	Halsey-Sweet Home	FA 3 in Halsey-FA 37 in Sweet Home	21.51
216	Orleans-Lebanon	FAS 202 at Orleans-FA 37 in Lebanon	15.00
217	Foster-Sweet Home	FA 37 at Sweet Home-FA 37 at Foster	4.00
218	Holley-Rice School	FAS 215 near Holley-Rice School	4.50
219	Junction City-Eugene	FA 3 in Eugene-FA 3 in Junction City	13.52
220	Albany-Lyons	FA 37 near Albany-FAS 124 at Lyons	24.68
221	Creswell-Pleasant Hill	FA 3 at Creswell-FA 29 near Pleasant Hill	7.22
222	Springfield-Pleasant Hill	FA 5 near Springfield-FA 29 near Pleasant Hill	8.30
223	Fox Hollow	FA 3 near Walker-FA 3 in Eugene	15.50
225	Alsea-Deadwood	FA 25 near Swisshome-Paris	19.45
226	Canary	FA 2 near Florence-Canary	5.60
227	Junction City-Lewis Ranch	FA 3 in Junction City-Lewis Ranch	6.20
228	Eugene-Marcola	FAS 210 near Eugene-Marcola	15.80
229	Eugene-Gillespie Corner	FA 3 in Eugene-Gillespie Corner	16.50
230	Jasper-Lowell	FA 29 at Lowell-FAS 222 at Jasper	11.60
231	Cottage Grove-Culp Creek	FA 3 in Cottage Grove-Culp Creek	19.20
232	Elkton-Sutherlin	FA 20 at Elkton-FA 3 in Sutherlin	27.57
233	Sutherlin	FAS 232 near Sutherlin-FA 3 near Sutherlin	1.69
234	Canyonville-Tiller	FA 3 at Canyonville-Tiller	23.51
238	Eugene-Walton	FA 3 in Eugene-Walton	27.13
239	Yoncalla-Scotts Valley	FA 3 near Yoncalla-Scotts Valley	7.10
240	Sutherlin-Nonpareil	FA 3 in Sutherlin-Nonpareil	8.60
241	Roseburg-Cleveland	FA 3 in Roseburg-Cleveland	12.80
243	Azalea-Anchor	FA 3 at Azalea-Anchor	6.30
244	Riddle	FA 3 near Myrtle Creek-Riddle	3.00
245	Glendale	FA 3 near Glendale-Glendale	3.70
246	Empire-Coos Bay	FAS 263 near Empire-FA 2 in Coos Bay	3.55
247	Powers	FA 14 near Myrtle Point-Powers	18.62
248	Lakeside	FA 2 near Lakeside-Lakeside	1.10
249	Jordan Point	FA 2 near Jordan Point-Jordan Point	2.80
250	Coquille-Fairview	State Highway No. 9 in Coquille-Fairview	8.00
251	Coquille-Myrtle Point	FA 14 near Coquille-FA 14 at Myrtle Point	13.10
252	Myrtle Point-Gravelford	FA 14 at Myrtle Point-Gravelford	8.00
253	North Umpqua	FA 3 in Roseburg-Rock Creek	23.30
255	Enegren Ferry-Delwood	FAS 262 at Enegren Ferry-Delwood	8.00
256	Port Orford	FA 2 at Port Orford-U. S. Coast Guard Station	0.79
257	Sixes-Dry Creek	FA 2 at Sixes-county road at Dry Creek	6.10
258	Gold Beach-Bagnall Ferry	FA 2 at Gold Beach-Bagnall Ferry	4.90
259	North Side Chetco River	FA 2 at Brookings- county road near Mill Creek	5.80
260	Oregon Caves	FA 17 at Cave Junction-Oregon Caves National Monument)	19.70
261	Rogue River Loop	FA 17 near Wilderville-FA 3 in Grants Pass	23.00
262	Coos River	FA 2 near Coos Bay-county road near Allegany	18.86
263	Cape Arago	FA 2 in North Bend-Cape Arago State Park	14.25

TABLE IX—Continued

F. A. S. No.	Name	Termini	Length in Miles
264	Grants Pass-West	FAS 261 near Grants Pass-FAS 261 near Grants Pass	4.50
265	Merlin-Hugo	FA 3 near Grants Pass-FA 3 near Hugo	9.30
266	Wilderville-Grants Pass	FA 17 at Wilderville-FAS 280 near Grants Pass	10.50
267	Holland Loop	FAS 260 near Cave Junction-FAS 260 north of Holland	6.20
268	Medford-Provolt	FA 3 in Medford-FAS 280 at Provolt	25.42
269	Crater Lake	FA 3 near Medford-Crater Lake National Park	66.60
271	Sams Valley	FA 3 in Gold Hill-FAS 269 near Trail	17.25
273	Medford-Sams Valley	FA 3 near Medford-FAS 271 in Sams Valley	12.10
274	Jacksonville-Central Point	FAS 268 in Jacksonville-FAS 269 east of Central Point	9.30
276	Rogue River-Wimer	FA 3 at Rogue River-county road at Wimer	7.80
277	Dead Indian	FA 15 near Ashland-county road near Frog Creek	6.50
278	Phoenix-Voorhies	FA 3 in Phoenix-FA 3 near Medford	3.10
280	Williams	FA 3 near Grants Pass-county road near Williams	23.13
287	Butte Falls	FAS 269 south of Trail-Butte Falls	15.40
288	Little Butte	FAS 269 in Eagle Point-Lake Creek	11.43
300	Odell	FAS 115 near Odell-FAS 356 near Van Horn	3.51
301	Schenck Corner-Van Horn	FAS 300 near Odell-FAS 115 near Van Horn	2.00
302	Cider Mill-Rockford	FA 1 near Hood River-county road near Oak Grove	4.25
303	Windmaster Corner-Oak Grove	FAS 302 in Oak Grove-FAS 356 near Hood River	2.00
305	Odell School-Fikes Crossing	FAS 356 near Summit-FAS 300 near Odell	2.25
306	Dee-Lost Lake Road	FAS 356 at Dee-county road southwest of Dee	2.70
307	Sherars Bridge	FA 4 near Tygh Valley-FA 12 at Grass Valley	28.97
308	Shaniko-Fossil	FA 12 at Shaniko-FA 6 in Fossil	43.65
309	The Dalles-Mill Creek	FAS 365 in The Dalles-county road near Mill Creek	8.00
310	Dufur-Atkinson Ranch	FA 4 at Dufur-FA 4 near Boyd	5.00
311	Tygh Valley-Pinehurst School	FA 4 at Tygh Valley-county road near Pinehurst School	7.90
312	Bakeoven Road	FA 4 at Maupin-county road east of Maupin	5.00
313	Rufus-Scott Canyon	FA 1 at Rufus-Scott Canyon county road	3.20
314	Willowdale-Ashwood	FA 4 near Willowdale-county road in Ashwood	12.00
316	Service Creek-Mitchell	FA 6 at Service Creek- FA 5 at Mitchell	24.85
317	Hardman	FAS 378 near Heppner-county road near Chapen Creek	14.92
318	Spray-Waterman	FA 6 at Spray-county road at Waterman	13.00
319	McKenzie-Bend	FA 4 near Bend-FA 5 near Sisters	20.07
320	O'Neil	FA 4 at Prineville Junction-FA 5 at Prineville	17.81
321	Crooked River	FA 5 in Prineville-State Secondary Highway No. 380 southeast of Prineville	21.44
322	Terrebonne-O'Neil	FA 4 at Terrebonne-FAS 400 near Prineville	5.10
324	Cline Falls	FAS 319 at Tumalo-FA 5 near Cline Falls	10.13
325	Tumalo-Deschutes	FAS 324 at Tumalo-county road at Deschutes	3.90

TABLE IX—Continued

F. A. S. No.	Name	Termini	Length in Miles
326	Redmond-Bend	FAS 319 near Bend-FA 4 at Redmond	13.53
327	Cloverdale-South	FA 5 at Cloverdale-FAS 319 near Sisters	4.50
329	Gerkhing Corner-North	FAS 319 near Tumalo-north to county road	2.30
330	Carroll Acres—Southeast	FA 4 near Bend-southeast to county road	2.20
356	Hood River	FAS 115 near Parkdale-FA 1 in Hood River	18.14
365	Chenoweth Creek	FA 1 in The Dalles-county road near Chenoweth Creek	3.00
369	Petersburg-Fairbanks	FA 4 near Petersburg-county road at Fairbanks	7.00
378	Wasco-Heppner	FA 1 near Sherman-FAS 439 at Heppner	101.98
385	Madras-Prineville	FA 5 in Prineville-FA 4 near Madras	30.07
390	Fossil-Kinzua	FA 6 near Fossil-county road near Kinzua	7.00
395	Terrebonne-Lower Bridge	FA 4 near Terrebonne-county road near Lower Bridge	6.80
397	Bend-Butler Ranch	FA 21 in Bend-FAS 398 near Bend	8.33
398	Alfalfa	FA 21 near Bend-county road near Alfalfa	10.40
400	Lone Pine School	FAS 320 near O'Neil-1 mile south of Jefferson county line	4.40
401	Prineville-McKay Creek	FA 5 in Prineville-Upper McKay Creek	8.60
402	Prineville-Davis Ranch	FA 5 in Prineville-FAS 403	17.50
403	Paulina	FAS 403-Paulina	39.53
404	Powell Butte	FA 5 west of Pilot Butte-south 5.72 miles	5.72
405	Lakeview-Burns	FA 16 at Valley Falls-FA 21 at Okerman Ranch	90.10
406	Warner Valley	FA 16 near Lakeview-Plush	46.21
407	West Side	FAS 408-south of West Side	5.15
408	Cottonwood Creek	FAS 410 west of Lakeview-1½ miles north of West Side	5.00
410	Klamath Falls-Lakeview	FA 4 in Klamath Falls-FA 16 in Lakeview	95.84
411	Maddox Corner-Thomas Creek	FAS 410 west of Lakeview-north to Thomas Creek	5.40
414	Fort Rock	FA 16 west of Fort Rock-Fort Rock	6.50
416	Dairy-Bonanza	FAS 410 at Dairy-FAS 418 at Bonanza	7.02
417	Bonanza-Malin	FAS 419 west of Malin-FAS 416 in Bonanza	14.80
418	Bonanza-Lorenz Mill	FAS 416 in Bonanza-FAS 410 at old Lorenz Mill	8.00
419	Klamath Falls-Malin	FAS 410 east of Klamath Falls-Oregon-California line	27.14
420	Klamath Lake	FAS 4 in Klamath Falls-State Highway 22 at Fort Klamath	49.70
421	Chiloquin-Southwest	State Highway No. 22 near Lobert-FAS 424 at Chiloquin	3.89
422	Malone	FAS 419 east of Merrill-Oregon-California line	1.80
423	Hatfield	FAS 419 east of Merrill-Oregon-California line	2.51
424	Klamath Agency-Chiloquin	State Highway 22 south of Klamath Agency-Chiloquin	4.60
425	Modoc Point	FA 4 at Modoc Point-State Highway 22 south of Klamath Agency	12.90
427	Midland	FA 33, 1½ miles north of Midland-FAS 410 at Altamont	5.61
428	Lower Klamath	FA 33 south of Midland-FAS 419 west of Dehlinger	7.55
429	Sprague River	FAS 410 west of Beatty-Sprague River	9.30
430	Bonanza-Langell Valley	FAS 417 near Bonanza-Lorella-FAS 416 in Bonanza	19.20
431	Olene-Poe Valley	FAS 410 near Olene-FAS 417 south of Bonanza	10.00

TABLE IX—Continued

F. A. S. No.	Name	Termini	Length in Miles
432	Keno-Worden	FA 33 near Worden-FA 15 at Keno	7.20
433	Hermiston	FAS 443 west of Echo-FAS 462 in Hermiston	10.63
434	Altamont-Mock Corner	FAS 428, 3 miles west of Dehlinger-FAS 427 at South Klamath	7.00
437	Kimberly-Long Creek	FA 6 at Kimberly-3 miles east of Malheur National Forest Boundary	47.85
439	Heppner	FA 1 at Heppner Junction-FA 30 at Nye	84.37
440	Mikkalo	FA 6 near Olex-Mikkalo	2.30
441	Lonerock	FAS 378 east of Condon-Lonerock	14.00
443	Lexington-Echo	FAS 439 at Lexington-FA 1 east of Echo	39.56
444	Ione-Morgan Ranch	FAS 439 at Ione-Morgan Ranch	9.70
447	John Day-Burns	FA 31 north of Burns-FA 5 in John Day	67.05
448	Austin Spur	FA 5 south of Austin-Austin	2.69
449	Beech Creek	FA 5 at Mt. Vernon-FA 30 northwest of John Day	5.35
450	Frenchglen	FAS 457 east of Burns-Frenchglen	62.00
452	Prairie City-Blue Mountain Springs	FA 5 in Prairie City-Blue Mt. Springs	13.00
453	Logdell	FAS 447 north of Seneca-Logdell	7.10
454	Hermiston-Cold Springs	FAS 462 in Hermiston-FA 18 near Cold Springs	7.16
455	Rome-Princeton	FAS 456 north of Princeton-FAS 513 near Rome	61.71
456	Diamond Valley	FAS 457 near Crane-FAS 450 at Grain Camp	49.18
457	Burns-Crane	FA 21 in Burns-Crane	28.89
458	Drewsey	FA 31 south of Drewsy-Drewsey	2.60
459	Silvies River	FA 31 in Burns-Silvies River	5.50
461	Pendleton-Cold Springs	FA 1 in Pendleton-FA 18 at Cold Springs	30.54
462	McNary Dam-Echo	FA 1 north of Echo-FA 18 near McNary Dam	11.97
463	Ordnance Depot	FA 1 south of Ordnance-Ordnance Depot	0.41
464	Umapine	Sunnyside north of Freewater-Oregon-Washington line north of Umapine	7.25
465	Athena-West	FA 19 in Athena-FAS 467, 2 miles south of Helix	7.98
466	Myrick	FAS 461 southeast of Holdman-FAS 467, 3 miles south of Helix	8.46
467	Havana-Stanton	½ mile north FA 19 at Havana-Stanton	14.20
468	Pendleton-Airport	FA 1 near Pendleton-Pendleton Airport	1.36
469	Weston-Elgin	FA 19 at Weston-FA 7 at Elgin	41.39
470	Stanfield-Pendleton	FA 1 south of Stanfield-FA 1 near Pendleton	24.65
471	Milton-South Fork Walla Walla River	FA 19 in Milton-Power Plant	8.40
472	Adams-Cayuse	FA 19 at Adams-FAS 473 at Cayuse	15.60
473	Adams-Mission	FA 19 at Adams-FA 1 near Mission	13.60
474	Athena-Thorn Hollow	FA 19 at Athena-FAS 472 north of Thorn Hollow	8.20
475	Mission-Thompson Ranch	FA 1 near Mission-Thompson Ranch	5.90
477	Starkey	FA 1 near Hilgard-Starkey	17.00
478	Mt. Glen	FA 7 in La Grande-FAS 481 at Iowa School	6.20
479	Lower Cove	FA 7 south of Alicel-Grande Ronde River	5.50
480	Enterprise-Wallowa Lake	FA 7 in Enterprise-south end Wallowa Lake	12.81
481	Island City-Imbler	FA 7 at Island City-Summerville-FA 7 at Imbler	17.40
482	Little Sheep Creek	FAS 480 in Joseph-Imnaha	30.42
483	Cove	FAS 7 at Island City-Cove-FA 1 at Union	22.16
484	Alder Slope	FAS 480 in Enterprise-Alder Slope	3.50
485	Zumwalt	FAS 480 north of Joseph-Crow Creek Road Junction	5.00

TABLE IX—Continued

F. A. S. No.	Name	Termini	Length in Miles
486	Medical Springs	FA 1 in Union-FAS 505 near Baker	42.67
487	Whiskey Creek	FA 7 in Wallowa-Marvin Ranch	7.00
488	North Powder River	FA 1 in North Powder-FAS 505 northwest of Haines	5.00
489	Whiskey Creek-Lostine	FAS 487 east of Wallowa-FA 7 in Lostine	6.80
490	Flora	FA 7 in Enterprise-Oregon-Washington line	45.28
491	Johnson Ranch-Wallowa	FA 7 northwest of Wallowa-FA 7 in Wallowa	3.70
497	Hurricane Creek	FAS 480 in Enterprise-FAS 480 in Enterprise	7.50
500	Robinette	FAS 505 east of Richland-Brownlee	10.81
501	Baker-Unity	FA 5 north of Unity-FA 1 in Baker	46.31
502	Sumpter	FAS 501 at Salisbury-Sumpter	19.86
503	Haines-Anthony	FA 1 near Haines-Anthony Creek	11.30
504	Pine Creek	FAS 505 in Halfway-Long Branch Creek	3.72
505	Baker-Cornucopia	FA 1 in Baker-Cornucopia	73.62
506	Baker-Goodrich Creek-Wingville	FA 1 at Baker-Goodrich Creek- Wingville	13.60
507	Rock Creek	FAS 503 west of Haines-Rock Creek-FA 1 in Haines	8.70
508	Muddy Creek	FAS 503 northwest of Haines-FAS 507 north of Rock Creek	4.40
509	Keating	FAS 505 south of Keating-Keating	3.20
510	New Bridge	FAS 505 at Richland-New Bridge	2.10
511	Richland-South	FAS 505 at Richland-Daly Creek	3.00
512	Halfway-North	FAS 505 at Halfway-East Pine Creek	3.00
513	I. O. N.	Oregon-Nevada line at McDermitt-Oregon-Idaho Line north of Jordan Valley	116.80
514	Cairo-Nyssa	FA 5 at Cairo-Oregon-Idaho line at Nyssa	8.64
515	East Cow Hollow	FAS 518 at Owyhee-East Cow Hollow	7.50
516	Weiser Spur	FA 1 south of Weiser-Oregon-Idaho line at Weiser	1.99
517	Payette Spur	FA 1 north of Payette-Oregon-Idaho line at Payette	1.67
518	Nyssa-Homedale	FAS 514 in Nyssa-Oregon-Idaho line west of Homedale	22.90
519	Graham Boulevard	FA 31 in Vale-FA 31 south of Hope	10.72
520	Adrian-Parma	FAS 518 near Adrian-Oregon-Idaho line west of Parma	2.77
523	Harper Loop	FAS 525 at Harper-FAS 525 south of Harper	6.30
524	Jordan Valley	FAS 513 west of Jordan Valley-FAS 13 north of Jordan Valley	10.18
525	Harper-Little Valley	FA 31 south of Harper-FA 31 southeast of Little Valley	9.20
527	Ontario-Cox Corner	FA 5 near Ontario-FA 5 west of Cairo	6.60
528	Ontario-Morgan Avenue	FA 5 in Ontario-FA 514 south of Cairo	6.40
529	Morgan Avenue-Nyssa	FAS 514 at Nyssa-Morgan Avenue south of Cairo	6.10
530	Enterprise Avenue	FAS 518 south of Nyssa-FAS 515 in East Cow Hollow	3.90
532	Oregon Trail School-Lapin Corner	FAS 518 near Kingman-FAS 515 in Cow Hollow	2.30
533	Rock Spring Canyon	FAS 515 west of Owyhee-road junction north of Mitchell Butte	4.00
535	Oregon Slope	FA 1 north of Payette Junction-FA 1 south of Weiser Junction	3.70
536	Ironside-South	FA 5 at Ironside-South Fork Willow Creek	3.80
537	Juntura-Beulah	FA 5 at Juntura-Beulah	14.50
			4,409.09

Public Lands Highways. Public Lands Highways are highways or parts of highways which, because of their being on unappropriated and unreserved public lands, Indian reservations or other federal reservations, are eligible to have Public Lands Highway Funds expended upon them. No definite system has been designated for this class of highways, but to date use of the Public Lands Highways Funds has been confined in large part to the Warm Springs Highway across the Warm Springs Indian Reservation and the I. O. N. Highway in Malheur County.

Federal authorizations of Public Lands Highway Funds for the fiscal years 1939 to 1943, and the amounts of each that have been released for use to date, are as follows:

	Authorized	Released
Fiscal year 1939	$167,394	$167,394
Fiscal year 1940	60,542	60,542
Fiscal year 1941	129,201	64,601
Fiscal year 1942	96,839	64,559
Fiscal year 1943	96,000	None

There have been no allotments of funds of this class since 1943.

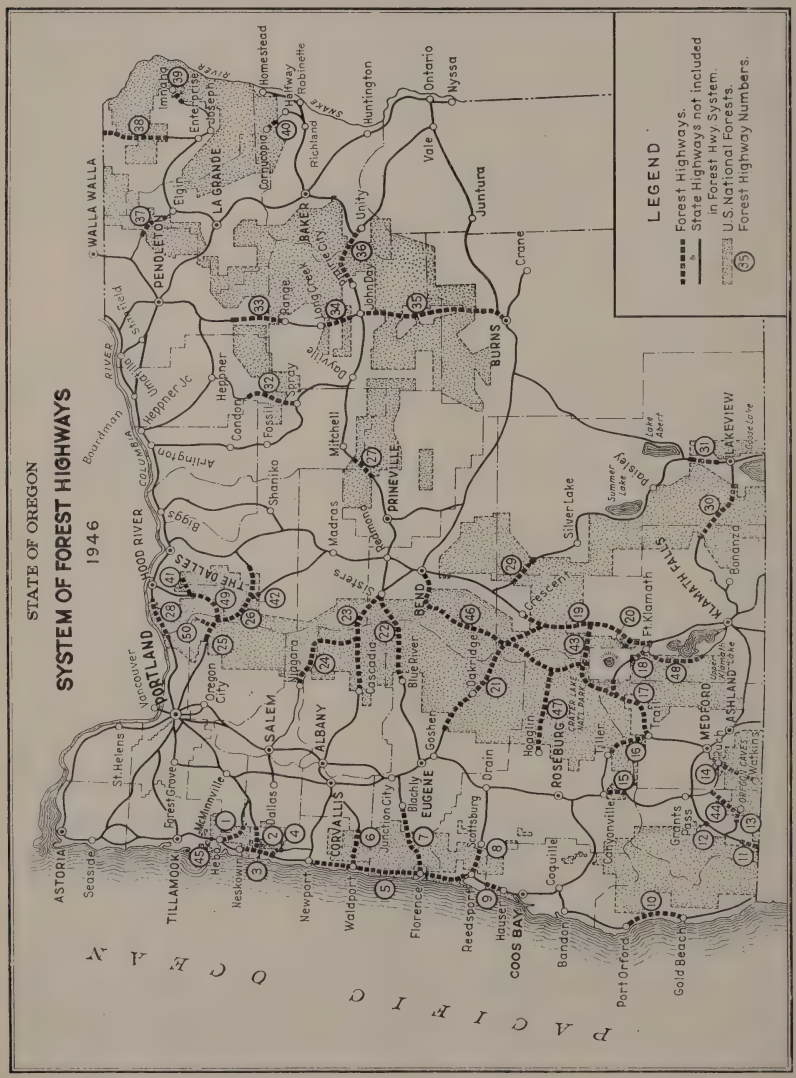
Federal Forest Highways. The federal Forest Highway System comprises such main highways within or across national forests as have been designated by the Federal Forest Service, the Public Roads Administration and the State Highway Commission for improvement with federal forest highway funds. A list of the highways included in this system is given in Table X.

Construction work financed with Forest Highway Funds is contracted and supervised by the Public Roads Administration. However, the Highway Commission has a voice in the selection of the projects to be undertaken, and in matters of location and standards of construction.

Prewar expenditures of Forest Highway Funds in Oregon were at the rate of about $1,200,000 per year. Allotments for the three post-war years are at the rate of about $3,400,000 per year.

County Roads. The greater part of the road or highway system in the State of Oregon consists of county roads, the control and responsibility for which are exercised by the county courts or boards of county commissioners of the 36 counties.

The county road system of the state consists of those roads which are not a part of the state highway system and the



roads which are not a responsibility of the Federal Government located in national forests, national parks, and Indian reservations.

The system totals approximately 30,000 miles, and the improvement and maintenance thereof presents a problem of considerable magnitude.

Prior to the year 1917, when the state highway system was created, the entire road system of the state was a responsibility of the county, and while some assistance was granted to the counties by the state during the period between the years 1913 and 1917, the amount of permanent work accomplished during this period was very limited. The funds available for expenditure previous to 1917 were raised largely by property taxes. In a few cases, bonds were voted to assist in improvements which were demanded by the advent of the automobile.

In 1919 the state market road act, which provided a one-mill state tax levy which was matched by the counties, became effective, and these funds, together with bond issues and special district taxes, were used to improve the roads which were placed in the market road system. Funds received by the counties from automobile license fees and gasoline tax revenues, in addition to the other revenues, enabled the counties to provide better engineering and improve the standards of construction. As a result, a considerable mileage of county roads was improved.

During the years 1933 to 1936 relief funds for the unemployed, appropriated by Congress, were used by the counties for the improvement of roads. In general, the money was expended for reconstruction, consisting of the widening of grades, the improvement of drainage, and the removal of brush from the rights of way.

Federal funds provided by the act of 1936 for federal secondary highways and feeder roads, and access road funds provided in 1941 and later as a war measure, also were of great assistance in the improvement of county roads.

The federal relief moneys which were provided for expenditure under the direction of the WPA were handled directly by the counties and the Federal Government. The federal

TABLE X

Oregon Forest Highway System

Forest Road No.	State No.	Name	Termini	Length in Miles
1	32	Three Rivers	Hebo-East Forest Boundary	13.9
2	39	Salmon River	Oregon Coast Highway-West Polk County Line	13.7
3	9	Oregon Coast	Neskowin-Siletz River	23.0
4	181	Siletz River	Oregon Coast Highway-Forest Boundary	6.0
5	9	Oregon Coast	Yaquina Bay-Umpqua River	68.7
6	27	Alsea	Walport-Benton County Line	28.4
7	34	Siuslaw	Oregon Coast Highway-Blachly	45.0
8	45	Umpqua	Reedsport-Scottsburg	15.6
9	9	Oregon Coast	Douglas County Line-Hauser	9.6
10	9	Oregon Coast	Port Orford-Gold Beach	31.4
11	25	Redwood	O'Brien Schoolhouse-State Line	5.4
12	25	Redwood	Summit Hayes Hill-Love Station	2.0
13	38	Oregon Caves	3 miles west of Forest Boundary to Caves	11.4
14	....	Applegate (county road)	Ruch-Watkins	17.0
15	1	Pacific	Canyonville-2¾ miles south of Forest Boundary	11.0
16	230	Tiller to Trail	Tiller to Trail	26.2
17	22	Crater Lake	Trail-Park Boundary	44.2
18	22	Crater Lake	Dalles-California Highway-Park Boundary	7.7
19	4	Dalles-California	Crescent-Old Fort Klamath	57.8
20	424	Sand Creek	Dalles-California Highway-Park Boundary	4.3
21	18	Willamette	Lowell to Dalles-California Highway	73.3
22	15	McKenzie	Blue River to Sisters	51.1
23	16	Santiam	1 mile east of Foster to Sisters	69.9
24	*	North Santiam	Niagara-Santiam Highway	43.2
25	26	Mount Hood	West Forest Boundary to Wapinitia Jct.	15.4
26	44	Wapinitia	Mt. Hood Highway to 1 mile north of Wapinitia	32.9
27	41	Ochoco	West Forest Boundary to North Forest Boundary	20.0
28	2	Columbia River	West Forest Boundary to East Forest Boundary	27.9
29	19	Fremont	West to East Forest Boundary	16.2
30	20	Klamath Falls-Lakeview	West to East Forest Boundary	29.8
31	19	Fremont	4 miles south of Valley Falls to 6 miles north of Lakeview	13.0
32	321	Heppner-Spray	Mouth of Chapin Creek to John Day Highway	26.3
33	28	Pendleton-John Day	2½ miles northwest of Albee to Range	30.7
34	28	Pendleton-John Day	Long Creek-South Forest Boundary	20.4
35	†	John Day-Burns	John Day-Burns	69.5
36	5	John Day	Prairie City-Unity	42.6
37	330	Weston-Elgin	McDougall's Camp to Summerville-Elgin Road	23.2
38	11	Flora-Enterprise	State Line to South Forest Boundary	30.3
39	350	Little Sheep Creek	West Forest Boundary to Imnaha	8.8
40	413	Baker-Cornucopia	Carson to Cornucopia	5.0
41	....	Loop-Dalles (county road)	Mt. Hood Highway to East Forest Boundary	15.0
42	53	Warm Springs	Wapinitia Highway Junction-Forest Boundary	7.0
43	‡	Diamond Lake	Union Creek to Dalles-California Highway via Diamond Lake	38.9

TABLE X—Continued

Forest Road No.	State No.	Name	Termini	Length in Miles
44	¶	Williams Creek	Williams Highway to Oregon Caves Highway	20.0
45	9	Oregon Coast	North Forest Boundary to South Forest Boundary between Beaver and Hebo	1.1
46	¶	Cascade Lakes	North Boundary of Crater Lake Park to Bend	101.0
47	....	North Umpqua (county road)	Rock Creek to Cascade Lakes Highway	60.0
48	421	Klamath Lake-West Side	Forest Boundary east of Gardner Peak to Forest Boundary south of Odessa Ranger Station	20.0
49	26	Mount Hood	Wapinitia Junction-North Forest Boundary	21.5
50	....	Timberline	Mt. Hood Highway Junction to Timberline Lodge	6.0
			Total mileage on Forest Highway System	1,382.3
			Mileage on State System	1,176.1

* Includes 31.7 miles on Highway 162 and 11.5 miles on county road.
† Includes 67.0 miles on Highway 48 and 2.5 miles on Highway 7.
‡ State Secondary Highways 233 and 425.
¶ Includes 7.2 miles on State Secondary Highway 261.
§ Includes 17.1 miles on State Secondary Highways 232 and 372.

Reconstructed portion of U. S. 99 in northern Josephine County.

secondary highway and feeder road funds were intrusted to the State Highway Department, and the state made the surveys and performed the construction engineering without cost to the counties. The counties were required, however, to provide the necessary rights of way and to assume the responsibility for maintenance subsequent to construction.

The federal act of 1944 amended the 1936 law. Under the provisions of the amended act, the counties and the state jointly recommend to the Federal Government roads to be incorporated in the federal aid secondary and feeder road system. Under the provisions of this act, approximately 1,700 miles of county roads were recommended for inclusion in the system. At the present time there have been approved by the Federal Government 1,370.45 miles of county roads.

Under the provisions of this act, the expenditure of the funds are intrusted to the State Highway Commission, and the state has agreed to match the federal funds, also purchasing the right of way, the obligation of the counties being only the maintenance of the roads or sections of roads after they are constructed. In some cases the counties have voluntarily agreed to assist in the construction costs, thereby securing improvement of important county roads at an earlier date than would be the case if the roads awaited their turn for improvement with state and federal funds.

The market road law passed in 1919, creating a system of market roads, and providing funds for improvement thereon, was amended in 1931, and the state one-mill tax levy then in effect was repealed. Many miles of the market road system were incorporated in the state secondary system. However, some 4,000 miles of roads are still in the county market road system, and many of the counties continue to levy a market road tax for their improvement.

FINANCIAL REPORT

By Office Engineering Department

S. H. PROBERT, *Office Engineer*

Sources of State Highway Income

Moneys used by the State Highway Commission in the improvement, maintenance and operation of highways and parks come from two general sources: (1) State funds, consisting principally of the Commission's share of the motor vehicle revenues collected by the State, and (2) Federal funds coming to the State in the form of Federal Aid. Some additional moneys are received as cooperation from counties and other agencies, but the amounts involved are small.

The state funds above referred to are derived almost entirely from road-user taxes and fees as follows:

1. Gasoline tax.
2. Diesel fuel tax.
3. Motor vehicle license fees and operators fees.
4. Motor transportation fees.
5. Fines for traffic law violations.

Of the revenues yielded by these taxes and fees, 15.7 per cent is allotted to the counties for use on county roads, and

TABLE XI

Distribution of Road-User Revenues as Between Counties, Cities, State Police and Highway Commission

Year	Total Revenue (after deduction of refunds and collection expense)	Amounts Paid During Calendar Year			
		To Counties	To Cities	To State Police	To Highway Commission
1939	$14,175,965.78	$2,064,468.02	$	$340,133.75	$11,771,364.01
1940	15,336,660.18	2,234,676.69		352,225.00	12,749,758.49
1941	17,835,937.73	2,410,961.39		341,097.47	15,083,878.87
1942	16,605,266.39	2,815,071.90		344,252.46	13,445,942.03
1943	14,738,561.68	2,612,415.69		390,898.76	11,735,247.23
1944	15,140,109.85	2,311,568.60	736,168.35	380,662.52	11,711,710.38
1945	16,734,157.53	2,340,748.48	745,461.30	428,111.75	13,219,836.00
1946	21,881,000.00	2,598,427.65	827,660.31	338,708.71	18,116,203.33
1947 (Est.)	22,940,000.00	3,394,000.00	1,081,000.00	466,000.00	17,999,000.00
1948 (Est.)	23,650,000.00	3,560,000.00	1,134,000.00	500,000.00	18,456,000.00

Note: The amounts paid to counties and cities during a calendar year are their respective pro ratas of the revenues of the preceding calendar year.

5.0 per cent is allotted to the cities for use on city streets. From these revenues, also, an additional amount approximating 2.3 per cent is appropriated by the state legislature for use by the State Police Department. The remaining 77.0 per cent is placed at the disposal of the State Highway Commission for use on highways and parks.

Table XI shows in dollars and cents how the road-user revenues of the past several years have been shared between the counties, the cities, the State Police and the State Highway Commission.

Table XII combines the State Highway Commission's income from road-user revenues with other state fund income and with federal aid and other cooperative income, to give the Commission's total income and to show the trends in that income during the period 1939 to 1948.

TABLE XII

Incomes to Highway Commission From all Sources 1939 to 1948

Year	State Funds		Federal Cooperative Funds	Miscellaneous Cooperative Funds	Total Income
	Road-User Revenues	Other State Sources			
1939	$11,771,364.01	$ .61	$2,652,475.77	$ 21,682.80	$14,445,523.19
1940	12,749,958.49	9,573.78	2,926,250.31	34,976.06	15,720,758.64
1941	15,083,878.87	9,758.70	2,810,894.93	69,291.05	17,973,823.55
1942	13,445,942.03	4,796.42	2,273,616.82	22,418.46	15,746,773.73
1943	11,735,247.23	2,907.87	4,341,584.26	34,050.00	16,113,789.36
1944	11,711,710.38	3,274.01	3,108,858.22	38,662.71	14,862,505.32
1945	13,219,836.00	4,333.64	2,290,000.27	2,411.01	15,516,580.92
1946 (Est.)	18,116,000.00	190,000.00	2,800,000.00	41,000.00	21,147,000.00
1947 (Est.)	17,999,000.00	255,000.00	7,200,000.00	.....	25,454,000.00
1948 (Est.)	18,456,000.00	230,000.00	7,200,000.00	.....	25,886,000.00

The recovery in income which has followed termination of the war has been remarkably rapid. The 1946 income (State funds) will exceed the highest of the incomes of prewar years by at least 20 per cent. However, since the 1946 road dollar is worth only about 66⅔ cents as compared with the prewar dollar, the 1946 income is, in buying power, 20 to 25 per cent less than that of the 1941 income. The 1947 income of state funds is expected to be slightly below the income of 1946 due to the fact that the shares to be paid to the counties, the cities

and the State Police from road-user income will be approximately $1,175,000 more in 1947 than in 1946 and the Highway Commission's share will be correspondingly less.

Federal fund income will be very considerably higher in 1947 than in 1946 due to the fact that in 1947 the postwar construction program will be well under way making possible the collection of federal aid at a more rapid rate.

Incomes, 1945 and 1946

A detailed statement of the income received during the calendar year 1945 appears in Table XIII. A similar statement

TABLE XIII

Income for Calendar Year 1945

Source of Income	Gross Amount Paid by Motor Vehicle Owners	Collection Expense (Sec. of State and P. U. C.)	Net Amount for State Highways, State Police, Cities and Counties
State Funds:			
Motor vehicle license fees	$ 3,900,329	$ 484,188	$ 3,416,141
Gasoline tax ($13,074,410 less $2,009,909 refunds)	11,064,400	31,154	11,033,246
Diesel fuel tax	249,172	18,880	230,292
Motor transportation fees	2,202,308	239,877	1,962,431
Fines for traffic law violations	92,047	.....	92,047
Cash discounts	4,334	.....	4,334
Sub-totals	$17,512,590	$ 774,099	$16,738,491
Less $423.112 contribution to state police, $2,340,749 to counties and $745.461 to cities			3,514,322
Net receipts of state funds for highway purposes			$13,224,169
Cooperative Funds:			
1942 and prior federal funds			$ 312,857
1943 federal aid funds			127,599
Federal access road funds			805,663
Federal strategic highway network funds			1,042,438
Federal flight strip funds			1,443
County cooperative funds			1,550
Miscellaneous cooperative funds			861
Sub-total, cooperative funds			$ 2,292,411
Total, all receipts			$15,516,580
Balance on hand, beginning of year			$ 7,878,011

showing estimated incomes for the calendar year 1946, is given in Table XIV.

The large balances shown in these tables as being on hand at the beginnings of the years, are balances accumulated dur-

ing the war years when the State construction program was necessarily curtailed. The greatly increased income during 1946 as compared with 1945, is due, of course, to the removal of gasoline from rationing and the resumption of normal use of motor vehicles which followed immediately the termination of the war.

TABLE XIV

Estimated Income for Calendar Year 1946

Source of Income	Gross Amount Paid by Motor Vehicle Owners	Collection Expense (Sec. of State and P. U. C.)	Net Amount for State Highways, State Police, Cities and Counties
State Funds:			
Motor vehicle license fees	$ 4,300,000	$ 585,000	$ 3,715,000
Gasoline tax ($18,375,000 less $2,825,000 refunds)	15,550,000	42,000	15,508,000
Diesel fuel tax	280,000	20,000	260,000
Motor transportation fees	2,578,000	300,000	2,278,000
Fines for traffic law violations	120,000	.....	120,000
Astoria-Megler ferry receipts	130,000	.....	130,000
Receipts from rentals, discounts, etc.	60,000	.....	60,000
Sub-totals	$23,018,000	$ 947,000	$22,071,000
Less $338,000 contribution to state police, $2,598,000 to counties and $828,000 to cities			3,764,000
Net receipts of state funds for highway purposes			$18,307,000
Cooperative Funds:			
1943 and prior federal funds			$ 230,000
1946 federal aid funds			700,000
1946 federal secondary funds			850,000
1946 federal urban funds			35,000
1947 federal secondary funds			15,000
Federal access road funds			270,000
Federal strategic highway network funds			700,000
County cooperative funds			14,000
Miscellaneous cooperative funds			27,000
Sub-total, cooperative funds			$ 2,841,000
Total, all receipts			$21,148,000
Balance on hand, beginning of year			$13,466,000

Expenditures, 1945 and 1946

The termination of the war in the late summer of 1945 with the resultant resumption of highway maintenance on a more nearly normal scale than obtained during the war years and the beginning of work under the State planned

program of postwar highway improvement, is reflected in an increase in expenditures from $9,928,101 in 1945 to an estimated $18,510,000 in 1946.

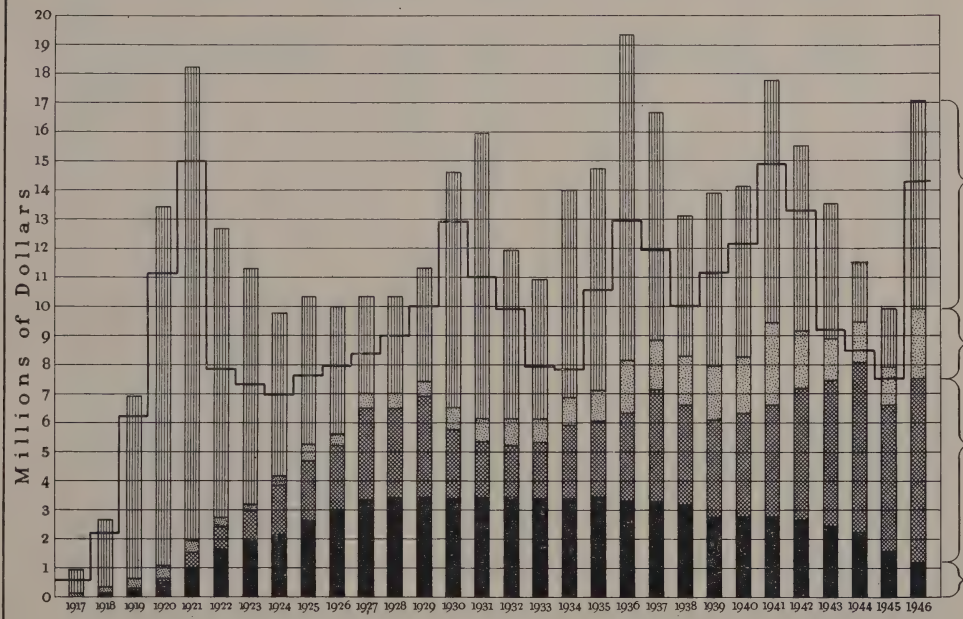
A detailed comparison of the expenditures of these two years is given in Table XV.

TABLE XV

Expenditures for Calendar Years 1945 and 1946

Class of Expenditure	1945 (Actual)	1946 (Estimated)
Capital Outlays:		
1943 and prior federal projects	$ 74,478	$ 35,000
1946 federal aid projects	8,406	2,400,000
1946 federal secondary projects	.....	2,700,000
1946 federal urban projects	.....	350,000
1947 federal urban projects	.....	450,000
Federal access road projects	567,457	37,000
Federal strategic highway projects	951,739	1,000,000
Federal flight strip projects	1,338	1,000
State construction projects	216,918	900,000
Cooperation in forest roadwork	.....	136,000
Minor betterments	150,565	255,000
Surveys	295,026	296,000
Property acquisition, general expense	46,256	55,000
Purchase of rights of way, quarries, etc.	237,520	509,000
Purchase of parks	8,407	25,000
Improvement of parks	5,260	16,000
Improvement of maintenance stations, etc.	3,451	70,000
Equipment purchases, sales and depreciation	Cr. 94,130	238,000
Sub-totals, capital outlays	$ 2,472,691	$ 9,473,000
Maintenance:		
Special maintenance, primary	$ 71,166	$ 250,000
Special maintenance, secondary	.....	110,000
General maintenance, primary	3,370,696	4,200,000
General maintenance, secondary	974,574	1,230,000
Maintenance of county roads	25	15,000
Maintenance of city streets	150	30,000
District maintenance superintendence	128,262	160,000
Sub-totals, maintenance	$ 4,544,873	$ 5,995,000
Miscellaneous:		
Administration and general supervision	$ 480,455	$ 635,000
Planning and traffic surveys	59,990	190,000
Travel and information bureau	57,032	155,000
Radio communication system	11,220	13,000
Operation of parks	41,183	81,000
Operation of maintenance stations, etc.	Cr. 22,197	62,000
Operation of drawbridges and ferries	88,511	220,000
Truck load inspection	85,040	110,000
Contribution to retirement fund	.....	90,000
Miscellaneous general expense	52,766	65,000
Service and clearing accounts	374,797	200,000
Bond interest and maturities	1,681,740	1,221,000
Sub-totals, miscellaneous	$ 2,910,537	$ 3,042,000
Totals, all purposes	$ 9,928,101	$18,510,000

STATE HIGHWAY EXPENDITURES 1917-1946



Expenditures below heavy line are expenditures of STATE FUNDS

Expenditures above heavy line are expenditures of FEDERAL and OTHER COOPERATIVE FUNDS

CONSTRUCTION

(1) Primary Highway Construction
(2) Secondary Highway Construction
(3) County Road Construction
(4) Minor Betterments
(5) Forest Road Cooperation

MISCELLANEOUS

(1) Parks. (2) Rights of Way. (3) Surveys.
(4) Administration. (5) Travel Department.
(6) Traffic Surveys. (7) Miscellaneous.

MAINTENANCE

(1) Special Contract Maintenance.
(2) General Maintenance.
(3) Operation of Drawbridges and Ferries.
(4) Equipment and Other Holding Accounts.

BONDS

(1) Interest Payments on Highway Bonds.
(2) Principal Payments on Highway Bonds.
(Retirement of temporary financing bonds is not included.)

Anticipated Incomes, 1947 and 1948

Total incomes, state funds, plus federal funds, for the years 1947 and 1948 are expected to run about $25,454,000 and $25,886,000, respectively. The increases over 1946 income of $21,148,000 are almost entirely in the income of federal funds. Little increase is expected in state funds due to the fact that allocations of road-user revenues to the counties, the cities and the State Police will average about $1,300,000 per year higher than in 1946, thereby taking up nearly the whole of the expected increases in road-user revenues. This situation arises from the fact that the allocations to counties and cities for a given year are computed from the revenues of the preceding year. The allocations for 1947 and 1948, being based on the high

TABLE XVI

Anticipated Incomes for Calendar Years 1947 and 1948

Source of Income	1947	1948
State Funds:		
Motor vehicle license fees (net)	$ 4,150,000	$ 4,250,000
Gasoline tax (net)	16,000,000	16,500,000
Diesel fuel tax (net)	265,000	270,000
Motor transportation fees (net)	2,400,000	2,500,000
Fines for traffic law violations	125,000	130,000
Astoria-Megler ferry receipts	210,000	215,000
Receipts from rentals, discounts, etc.	45,000	15,000
Sub-totals	$23,195,000	$23,880,000
Less contributions to state police	466,000	500,000
Less contributions to counties	3,394,000	3,560,000
Less contributions to cities	1,081,000	1,134,000
Sub-totals	$ 4,941,000	$ 5,194,000
Total estimated receipts of state funds for highway purposes	$18,254,000	$18,686,000
Cooperative Funds:		
1943 and prior federal funds	$ 619,000	$ .....
1946 federal aid funds	2,529,000	500,000
1946 federal secondary funds	1,195,000	500,000
1946 federal urban funds	576,000	200,000
1947 federal aid funds	1,000,000	2,229,000
1947 federal secondary funds	435,000	1,595,000
1947 federal urban funds	50,000	641,000
1948 federal funds	.....	1,500,000
Federal access road funds	325,000	.....
Federal strategic highway funds	331,000	.....
Federal flight strip funds	5,000	5,000
Federal advance engineering funds	135,000	30,000
Total estimated receipts of cooperative funds	$ 7,200,000	$ 7,200,000
Totals, all estimated receipts	$25,454,000	$25,886,000
Estimated balance on hand, beginning of year	$16,104,000	$ 9,977,000

revenues of 1946 and 1947, will naturally be considerably higher than the allocations for 1946 which were based on the low revenues of 1945.

The income of federal cooperative funds will be higher than in 1946 by about $4,900,000 each year, due to the fact that during 1947 and 1948 the postwar construction program will be in full swing making possible the collection of federal funds at a much higher rate than in 1946.

Detailed statements of the incomes anticipated for the years 1947 and 1948 are given in the accompanying Table XVI.

Anticipated Expenditures, 1947 and 1948

It is expected that during 1947, expenditures will reach a total of about $31,581,000. This high total exceeds the State's current income of state funds by approximately $13,300,000, and is made possible by federal cooperation in the amount of $7,200,000 and $6,100,000 from funds held in reserve by the Highway Commission from the income of the war years. In 1948, the total expenditure will drop to an expected total of about $28,836,000.

Whether expenditures in these large amounts can be continued beyond 1948, will depend on the attitude of the Congress in the matter of continued federal aid in amounts comparable with those made available for the first three of the postwar years; also on the ability of the State to continue the matching of federal aid on a comparable scale.

While the $31,581,000 to be expended in 1947 appears to be a considerably larger amount than Oregon is accustomed to expending in its highway operations, the present actual purchasing power of that amount under present conditions is not greatly in excess of the $18,215,000 expended in 1921, the $19,708,000 expended in 1936 or the $17,755,000 expended in 1941.

Details of the contemplated expenditures in 1947 and 1948 are given in accompanying Table XVII.

Federal Participation in Financing of State Highway Work

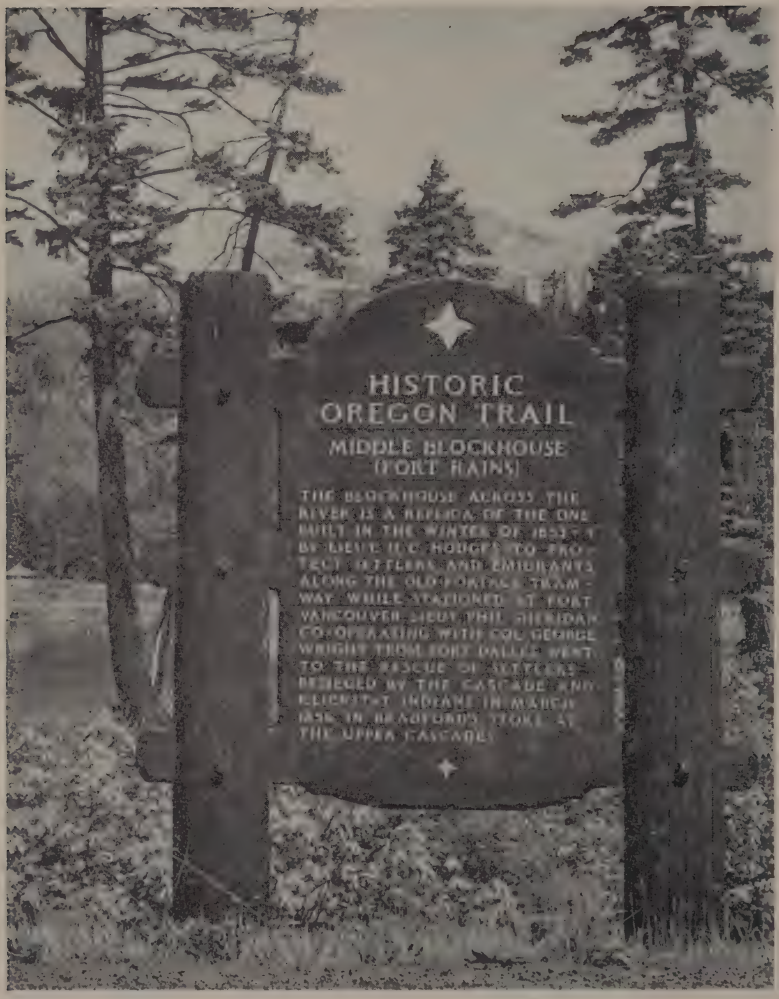
Much of the work being performed under the direct control and supervision of the State Highway Commission is financed

TABLE XVII

Anticipated Expenditures for Calendar Years 1947 and 1948

Class of Expenditures	1947	1948
Capital Outlays:		
1943 and prior federal projects	$ 19,000	$ .....
1946 federal aid projects	3,807,000	100,000
1946 federal secondary projects	1,410,000	100,000
1946 federal urban projects	800,000	225,000
1947 federal aid projects	2,500,000	3,615,000
1947 federal secondary projects	2,500,000	1,610,000
1947 federal urban projects	500,000	845,000
1948 federal projects	500,000	5,500,000
Federal strategic highway projects	659,000	.....
Federal flight strip projects	5,000	5,000
State construction projects	2,500,000	2,500,000
Cooperation in forest road work	465,000	100,000
Minor betterment	1,000,000	750,000
Surveys	375,000	375,000
Property acquisition, general expense	60,000	60,000
Purchase of rights of way, quarries, etc.	830,000	740,000
Purchase of parks	200,000	125,000
Improvement of parks	310,000	110,000
Improvement of maintenance stations, etc.	270,000	210,000
Equipment purchases, sales and depreciation	950,000	225,000
Contingency reserve, construction	1,000,000	1,000,000
Sub-totals, capital outlays	$20,660,000	$18,195,000
Maintenance:		
Special maintenance, primary	$ 300,000	$ 350,000
Special maintenance, secondary	100,000	100,000
General maintenance, primary	4,900,000	5,000,000
General maintenance, secondary	1,500,000	1,550,000
Maintenance of county roads	20,000	20,000
Maintenance of city streets	100,000	100,000
District maintenance superintendence	180,000	180,000
Contingency reserve, maintenance	100,000	100,000
Sub-totals, maintenance	$ 7,200,000	$ 7,400,000
Miscellaneous:		
Administration and general supervision	$ 700,000	$ 720,000
Planning and traffic surveys	221,000	225,000
Travel and information bureau	250,000	250,000
Radio communication system	17,000	15,000
Operation of parks	190,000	270,000
Operation of maintenance stations, etc.	65,000	65,000
Operation of drawbridges and ferries	310,000	300,000
Truck load inspection	135,000	140,000
Contribution to retirement fund	370,000	467,000
Miscellaneous general expense	85,000	85,000
Service and clearing accounts	250,000	100,000
Increase in revolving fund	350,000	.....
Bond interest and maturities	778,000	604,000
Sub-totals, miscellaneous	$ 3,721,000	$ 3,241,000
Totals, all purposes	$31,581,000	$28,836,000

in part or in whole with funds provided by the Federal Government. Federal funds thus utilized are of several classes, each class being subject to such special use and to such special



Historic Oregon Trail marker in Sheridan State Park on the Columbia River Highway near Cascade Locks.

limitation and control as may be specified for it by the Congress. The several classes that are currently active or that have been active during recent years are as follows:

Currently Active Funds

1. Regular Federal Aid Funds
2. Federal Secondary Highway Funds
3. Federal Urban Highway Funds

Recently Active Funds

1. Access Road Funds
2. Strategic Highway Network Funds
3. Flight Strip Funds
4. Advance Engineering Funds

The first two classes of the currently active funds were made available year after year for many years prior to the war with comparatively slight changes in annual amounts and with few changes in basis of application. Their program is to assist the states in the development of road systems adequate to meet peacetime requirements. The third class of the currently active funds was set up by the federal aid highway act of 1944, in recognition of the growing need for improvement of federal aid routes through cities and their surrounding urban areas. Presumably, this class of funds will be continued on a more or less permanent annual basis, the same as the regular federal aid funds and the federal secondary highway funds.

The four classes of funds listed as recently active funds were set up in 1941 to make possible and to expedite road and street improvements particularly essential to defense activities and the war effort. Work under this group of war-time funds consisted principally of improvements giving access to military establishments, war industries, timber areas and mines, of the construction of emergency airplane landing fields (called flight strips), and of such improvements on the main highways comprising the "strategic network" as were of particular necessity from a military standpoint.

Federal allotments for the first two classes of the currently active funds were discontinued during the fiscal years 1944 and 1945, due to war conditions, but were resumed in 1946 in greatly increased amounts and are expected to be continued

into the future indefinitely. The four classes of funds listed as recently active funds, being war-time funds, have already been discontinued. They are listed here only because some work is still in progress under them and some considerable amounts remain to be paid to the State from them in the form of reimbursement.

Federal funds for highway work are not turned over to the states in advance of construction. Instead, they are paid to the states in the form of reimbursement during and after the period that the work is in progress. They are paid only on projects for which the plans have been previously approved by the Public Roads Administration and for which the work is conducted in accordance with the applicable requirements established by the Public Roads Administration. The percentages of total cost to which the federal participation has been limited during recent years are as follows:

Class of Funds	Limit of Federal Cooperation	
	Basic	For Oregon
Regular federal aid funds	50%	62.04%
Federal secondary highway funds	50%	62.04%
Federal urban highway funds	50%	62.04%
Access road funds	100%	100.00%
Strategic network highway funds	75%	81.02%
Flight strip funds	100%	100.00%
Advance engineering funds	50%	62.04%

Oregon's variations from the basic limits above indicated come about through a provision which grants highway percentages of cooperation to those states in which unappropriated public lands comprise more than five per cent of the total area.

Federal aid apportioned to a state must be placed under contract within one year after the close of the fiscal year for which the apportionment is made. Amounts not so contracted revert to the federal government to be redistributed among all of the states. Under this arrangement, the State has about three years in which to use the apportionment for a given year.

Oregon's allotments of federal aid funds for each of the three fiscal years 1946-47-48 are as follows:

Regular federal aid funds	$3,728,908
Federal secondary highway funds	2,544,582
Federal urban highway funds	810,873
	$7,084,363

TABLE XVIII

Federal Aid Funds and Forest Road Funds Apportioned to Oregon

Period for Which Funds Are Apportioned	Federal Aid Funds	Forest Road Funds	Total
Total of prior apportionments*	$51,793,727.93	$20,361,849.89	$72,155,577.82
Act of June 8, 1938:			
July 1, 1939, to June 30, 1940			
Federal aid funds	1,638,823.00	898,443.00	2,537,266.00
Reapportionment (1937)	8,685.00		8,685.00
Secondary or feeder road funds	245,823.00		245,823.00
Reapportionment (1937)	892.00		892.00
Grade crossing elimination funds	224,953.00		224,953.00
Reapportionment (1937)	1,832.00		1,832.00
Federal lands funds	60,542.00		60,542.00
July 1, 1940, to June 30, 1941			
Federal aid funds	1,884,937.00	1,171,755.00	3,056,692.00
Reapportionment (1938)	6,361.00		6,361.00
Secondary or feeder road funds	245,861.00		245,861.00
Reapportionment (1938)	954.00		954.00
Grade crossing elimination funds	335,220.00		335,220.00
Reapportionment (1938)	840.00		840.00
Federal lands funds	64,600.00		64,600.00
Act of September 5, 1940:			
July 1, 1941, to June 30, 1942			
Federal aid funds	1,647,906.00	947,711.00	2,595,617.00
Secondary or feeder road funds	288,383.00		288,383.00
Grade crossing elimination funds	228,715.00		228,715.00
Federal lands funds	64,559.00		64,559.00
July 1, 1942, to June 30, 1943			
Federal aid funds	1,649,132.00	950,642.00	2,599,774.00
Secondary or feeder road funds	288,598.00		288,598.00
Grade crossing elimination funds	228,533.00		228,533.00
Act of November 9, 1941:			
Period of war emergency			
Flight strip funds	1,209,750.82		1,209,750.82
Access road funds	4,964,907.04		4,964,907.04
Strategic network funds	2,692,256.12		2,692,256.12
Advance engineering surveys	164,913.00		164,913.00
Act of December 20, 1944:			
July 1, 1945 to June 30, 1946			
Federal aid funds	3,728,908.00	3,421,661.00	7,150,569.00
Secondary or feeder road funds	2,544,582.00		2,544,582.00
Urban funds	810,873.00		810,873.00
July 1, 1946 to June 30, 1947			
Federal aid funds	3,728,403.00	3,439,553.00	7,167,956.00
Secondary or feeder road funds	2,544,245.00		2,544,245.00
Urban funds	810,873.00		810,873.00
Totals	$84,109,587.91	$31,191,614.89	$115,301,202.80

* For the detail of yearly allotments prior to 1938, see former reports of the State Highway Commission.

The classes of projects to which the use of the several kinds of federal funds are limited are as described in the paragraphs which follow.

Regular Federal Aid Funds: Regular federal aid funds can be applied only on permanent improvement projects on highways included in the Federal Aid Highway System. A map of the system accompanies this report, and in the accompanying Table VIII there are given the numbers, names, and lengths of the highways which comprise the system. The total mileage of federal aid highways is 3,934.6 miles, which is approximately 80 per cent of the total mileage in the Primary State Highway System.

Federal Secondary Highway Funds: Federal secondary highway funds are available for use only on state highways and county roads included in the federal secondary highway system. This system includes at present 4,409 miles of highways of which 885 miles are primary state highways, 2,154 miles are secondary state highways and 1,370 miles are county roads. The names, numbers and mileages of the highways and roads comprised in the system are as given in Table IX.

Federal Urban Highway Funds: The use of federal urban highway funds is limited to the portions of federal primary highways which are within cities having populations greater than 5,000 or within such areas immediately adjacent to such cities as may by joint action of the Highway Commission and the Public Roads Administration be designated "urban areas".

Federal Lands Highway Funds: Federal lands highway funds are not at present available but when available may be used for work on unappropriated and unreserved public lands, non-taxable Indian lands, or other federal reservations other than forest reservations. The locations in Oregon at which these funds can be used advantageously are in the public land areas in the far southeastern portion of the state, in the Warm Springs Indian Reservation, and the Klamath Indian Reservation. Use of the funds has been confined, so far, to the I. O. N. Highway in Malheur county, the Central Oregon Highway in Harney county, the Warm Springs Highway in Jefferson

county, and the Klamath Falls-Lakeview Highway in Klamath county.

Federal lands highway funds may be applied on a 100 per cent basis on those parts of federal lands highway projects which are within the limits of public lands of the kinds mentioned in the preceding paragraph. None can be applied on portions of the projects which are on privately-owned lands or state-owned lands.

Access Road Funds: Access road funds were available during the war period to be used only on road and street improvements considered by the War Department and the War Production Board to be essential to the war effort and, then, only on projects on roads giving access to military establishments, war industries, mines and timber areas producing materials needed for war purposes.

Federal participation on access road projects was usually in the entire amount of the cost, but State cooperation was expected where the projects were of benefit to state highway routes.

Strategic Highway Network Funds: Strategic highway network funds were available only for highway essential projects on highways included in the strategic highway network. This network included approximately 2,800 miles of the arterial highways in the primary state highway system.

Flight Strip Funds: Flight strip funds were available only for the construction of temporary landing fields considered by the War Department to be essential to the war effort. Federal participation in the cost of flight strip projects was on a 100 per cent basis.

Advance Engineering Funds: Advance engineering funds were available only for surveys, designing and other preliminary engineering work for major highway and street improvement projects proposed for construction as a part of a post-war program. They were limited, also, to projects on the inter-regional highway system, which system, in Oregon, consists of U. S. Highway No. 99 and the portion of U. S. Highway No. 30 which is east of its junction with U. S. Highway No. 99.

Forest Highway Work

Federal forest highway work, unlike federal aid highway work, is performed under the direct supervision of the federal Public Roads Administration. The State Highway Commission has a voice in the selection of projects and in the types and standards of construction, and sometimes has charge of the making of surveys, but does not in any other respect participate in the direction and performance of the work. The Public Roads Administration awards the construction contracts, engineers the work, pays the contractor and does all other things necessary to bring the work to satisfactory completion.

Federal allotments for forest highways have been made more or less regularly since 1916 and have been distributed among the states in proportion to their areas of national forest land. Oregon's share of these allotments has been $31,191,615. Of this amount, $19,427,813 has been expended on the state highway system to date. This expenditure of federal moneys has been supplemented by State cooperation in the amount of $6,068,679, and county cooperation in the amount of $2,286,030, bringing the total expenditures for forest highway projects on the state highway system to $27,782,522. This expenditure has resulted in the completion of 857 miles of grading, 855 miles of rock surfacing, 179 miles of oiling and 129 miles of bituminous macadam.

Funds available for forest highway work during the fiscal years 1946, 1947 and 1948, are expected to total about $11,750,000.

The use of forest highway funds is limited to work on the Forest Highway System, which system has been arrived at by mutual agreement between the Public Roads Administration, the National Forest Service, and the State Highway Commission. It includes only roads which are within or near to National Forests. A listing of the roads in the system appears in accompanying Table X. Most, but not all, of the roads included are state highways.

Financial cooperation in forest highway work by the State or by counties is not required but is sometimes given. In all cases, the cost of right of way across lands not owned by the Federal Government is borne by the State or, if the road is a county road, by the county.

Sections of highway constructed with forest highway funds are maintained by the federal government for two years. Responsibility for maintenance is then assumed by the State or the county, depending on whether the project is, or is not, on the state highway system.

County and City Participation in Revenues From Motor Vehicle Imposts

Revenues from motor vehicle imposts are used first of all to pay refunds allowable under the provisions of the laws and to defray expenses incurred by the Secretary of State and the Public Utilities Commissioner in making collections of the revenues and in performing certain administrative and enforcement duties with which they are charged by the provisions of the applicable laws.

The balances remaining after payment of the refunds and expenses mentioned, are allotted as follows:

To Counties	15.7%
To Cities	5.0%
To State Police Department—A monthly allowance fixed by the State Legislature, which amount at present approximates	2.3%
To Highway Commission—The balance remaining after payment of above listed allotments, which balance approximates	77.0%

County Participation in Income: County participation in state highway income is in an amount equal to 15.7 per cent of that income, but not less than $2,000,000 in any one year. This share of the income is distributed among the several counties in proportion to the number of motor vehicles of all kinds registered from the counties during the preceding year.

Of the counties' share of the income for a given year, $800,000 is distributed to the counties on July 15th of that year, $1,200,000 is distributed on December 15th of that year and the balance is distributed not later than February 1st of the following year.

Funds received by the counties from this source are required by law to be used for the following purposes, preferentially in the order in which they are listed.

1. In payment of interest and retirement of bonds, except in cases where other provision has been made for such payment.
2. In payment of the cost of preparing the roadbed, bridges, etc., for the construction of state highways, as provided by law, except in cases where other provision has been made for such cost.
3. In any other manner for general road improvement, at the discretion of the county court.

For detail as to the extent to which the counties have participated in these revenues, see Table XI in Section Two and Table No. 26 in Section Three of this report.

City Participation in Income: The cities participate in the state highway income by virtue of an act passed by the legislature at the session of 1943. The act provides that the cities shall receive an amount equal to 5 per cent of the state highway income, with the limiting provision that they are not to participate in the income of any year in which such participation will reduce below $11,000,000 the balance remaining to be shared between counties, the State Highway Commission, and the state police.

The funds received by the cities are allocated in proportion to population, with the provision that where the population of the city is in excess of 100,000, only two-thirds of such city's population is to enter into the calculation.

The funds paid to the cities each year are based on the amount of state highway income from motor vehicle or road-user fees of the preceding year. The first funds under this law were paid to the cities in 1944 and were based on 1943 revenues. Payment in any given year is made on February 1, or as soon thereafter as the allocation has been approved by the State Highway Commission.

One of the provisions of the law requires each city to set aside in a State Tax Street Fund the money which it receives,

and any money permitted to remain in that fund unexpended reverts to the state for reallocation to other cities unless the city has complied with certain provisions of the law. These provisions require that the city shall prepare and submit a plan for the use of the money, if held for two or more years, to the State Highway Engineer for approval, and cities of less than 1,000 population may not expend funds received until plans for the expenditure have been submitted to and approved by the State Highway Commission. Cities of more than 1,000 population may expend their funds without submitting plans to the Commission if the funds are expended within two years after their receipt. Many of the cities expended their funds during the year in which they were received, and others placed the funds in reserve for future expenditure.

Reports submitted by the cities for the years 1944 and 1945 indicate that the funds received were used as follows: $245,-910.32 was placed in reserve for future expenditure, $424,258.38 was expended for maintenance, and $746,159.92 was expended for construction. The law does not require that the city shall submit a report indicating the manner in which the funds were expended, and many of the cities have not reported their expenditures. However, the reports submitted by the majority of cities indicate the manner in which the funds have been used.

The law provides that the allocation of moneys to the city shall be made upon the basis of the last federal census, which was in 1940. However, by an act of the legislature in the session of 1945, provision was made whereby the Secretary of State was authorized to take a census of the population of any city whose population was less than 2,000 by the last federal census, the cost of such census being borne by the city making the request. As a result, a number of cities have requested recounts of their populations and, hereafter, these cities will participate in the available funds on the basis of the recounts.

For information as to the amounts the cities have received from this source of revenue to date, see Table XI of Section Two and Table No. 27 of Section Three of this report.

Rogue River Bridge on Crater Lake Highway near Trail, reconstructed to greater width.

REPORT OF CONSTRUCTION DEPARTMENT

H. G. SMITH, *Construction Engineer*

The past biennium has been one of reconversion from war to peace-time construction. From July, 1944, until October, 1945, highway construction consisted primarily of projects of military importance on the Strategic Network, access roads to timber reserves and military areas, and the production of maintenance materials. In October, 1945, clearance was given to proceed with the Postwar Program, and the contracting of work on Federal-aid Primary, Federal-aid Urban and Federal-aid Secondary Projects was begun. Many projects financed entirely by State funds, which had been deferred because of wartime restrictions, were also released at that time.

From the beginning of the biennium, until October, 1945, contracts were awarded on eight access projects, five Strategic Network projects and 65 State-financed projects. Between October, 1945, and June 30, 1946, contracts were let on 23 Federal-aid Projects, two Federal-aid Urban Projects and 20 Federal-aid Secondary Projects. Approximate costs of the various types of projects contracted are: Strategic Network $2,140,000, Access Roads $827,000, Federal-aid Primary $4,-344,000, Federal-aid Urban $426,000, Federal-aid Secondary $3,547,000, and State projects $2,458,000, for a total of $13,-742,000. Of this amount, $4,006,000 was expended prior to October, 1945, and $9,736,000 subsequent to that date.

Bids were received on several other major contracts, but were rejected because of high bids. Among the major projects for which bids were rejected are the following: Federal-aid project on the Columbia River Highway, between Troutdale and Wahkeena Creek, involving hydraulic dredging, topping and rock toe slope protection; Federal-aid Urban project on Front Avenue in Portland, involving grading, paving and traffic interchange structures. These jobs were readvertised several times with little or no reduction in prices, and it was decided to postpone further action until material and labor became more stabilized.

While some contractors have rehabilitated their outfits, many are still handicapped with worn-out equipment, lack

of repairs and inexperienced personnel. For this reason, satisfactory bids were received only on types of construction requiring machinery such as earth grading, crushed rock surfacing and paving. Projects involving much hand labor or material, particularly in the vicinity of cities, have not been consistently contracted.

A brief resume is given below of the more important types of projects.

Strategic Network Projects: Only two projects of this type, involving five contracts, were awarded during the biennium. The first of these, awarded in May, 1945, was the Coyote Creek-Grave Creek Section of the Pacific Highway in Josephine county. This unit, consisting of 4.36 miles of surfacing and bituminous macadam, and costing approximately $680,000, eliminates another narrow, winding section of the Pacific Highway. While scheduled for completion in July, 1946, shortage of materials slightly delayed completion, and it was not opened for traffic until October, 1946.

The second project in this classification, consisting of two grading, one overcrossing and one bridge contract, is the Steiwer Hill-Albany Section of the Pacific Highway East. The completed project is estimated to cost $1,460,000, is 10.17 miles in length, and saves 1.8 miles in distance. Completion of this section will provide a modern, two-lane concrete highway between Salem and Albany. This project was awarded in May, 1945, and was scheduled for completion in September, 1946. All grading has been completed on the section, but shortage of labor and structural lumber has delayed the bridge contractor, until it is now estimated that the road cannot be open to traffic until the fall of 1947.

Access Road Projects: Seven projects of this type, involving seven grading contracts and one bridge contract, were contracted and completed during the period covered by this report. Of these, three were military and four were timber access roads. The three military projects were the Astoria Naval Hospital Section, Clatskanie Army Works Road and the Klamath Falls Marine Barracks Road. All these projects consisted of grading, surfacing, and oiling.

The timber access roads were the Foster-Canyon Creek Section of the Santiam Highway, involving regrading, widening and oiling of the existing highway; Roseburg Section, involving the widening of a short section of the Pacific Highway, the reconstructing of a bridge, and some work on city streets entering on the highway; Roots Creek-Siletz Section of the Siletz Secondary Highway involving the surfacing of the existing highway; and the Crater Lake-Fort Klamath Section of the Crater Lake and West Side Klamath Lake Highways, involving grading, drainage and oiling. All the timber access roads were built to expedite the movement of logs from the woods to the mills.

Regular Federal-aid Projects: Twenty-three projects of this type were awarded during the period from October, 1945, to June 30, 1946. Only a few of the major jobs will be discussed in this report. The one which is probably of most interest to the traveling public is the Davies-Barnes Road Section of the Sunset (Wolf Creek) Highway. Several contracts involving grading, drainage and structures of this section are nearing completion and the contract for the paving is getting underway to enable the contractors to produce their paving material during the winter months and be sure of completion during the paving season of 1947.

The Barnes Road-Multnomah County Line Section remains to be contracted, which will complete the Sunset Highway from Portland to the Coast.

Another project of considerable importance to the public as a whole is the reconstruction of The Dalles-California Highway between Diamond Lake Junction and the Williamson River. Involving 35.9 miles of new grading, this job shortens the distance between Chemult and Klamath Falls by 3.7 miles; provides an 800-foot lower summit between these points and eliminates the narrow, treacherous, frequently slippery Sun Mountain Pass. This project is scheduled for surfacing and oiling in 1947, and should be open to traffic in early 1948.

Federal-aid Secondary Projects: A total of 20 of this class of project were placed under contract during the period covered by this report. Several of the more important ones will be commented upon.

The largest job undertaken is the widening of South Sixth Street on the Klamath Falls-Lakeview Highway in Klamath Falls. This project illustrates the design necessary to convert a highway, congested by several miles of ribbon development adjacent to the city limits, into a modern highway permitting traffic to flow freely and with safety. This is accomplished by necessary center dividers with left-turn lanes, and other controls to guide traffic. The property owners on a portion of the project cooperated by the construction of service roads alongside the project to serve the stores set well back from the right of way.

Improvement nearing completion on South Sixth Street in Klamath Falls, showing service roadway at right.

Another job, while small in size, aroused considerable interest by being the first Federal-aid Secondary Postwar Project completed in the United States. This unit was the Porcupine Butte-Chichester Gulch Section of the Shaniko-Fossil Secondary Highway in Wheeler county. Consisting of 3.4 miles of grading and topping, this project cost approximately $39,300.

The balance of the work performed under this heading consisted principally of grading, surfacing, and oiling of various

State secondary highways and County roads which are on the Federal-aid Secondary System.

State Projects: The greater majority of State projects (65 in number) consisted of rock production jobs to provide rock for necessary maintenance and resurfacing on sections of highways which had failed under heavy military and log traffic. Several slide control and drainage projects were included also.

One contract was awarded for the widening, constructing of curbs, draining and oiling of the Oregon Coast Highway in Oceanlake.

Another job was the Mill Gulch-Salisbury Section of the Baker-Unity Highway, which provided for widening of various sections of the existing road so that lumber could be hauled to Baker via truck in lieu of the Sumpter Valley Railroad about to be abandoned.

General Comment: During the biennium preceding the present, the Construction Department was severely hampered by the lack of personnel. Many employees were called to service and a few left for work in war industries. Now, however, nearly all employees who were in service have returned to their old jobs, and the strength of field engineering parties has very nearly reached its normal level. In the forepart of this biennium, field parties were concentrated principally on location surveys for postwar work, but now the majority of the parties are engaged on construction. Highway location has become much more detailed and involved than in former years due in part to special planning required at intersections and in cities and towns to provide safe and efficient traffic guidance.

One of the ten portable pavement repair plants operated by state forces.

Snow removal equipment operating on Willamette Highway near the summit of the Cascade Range.

REPORT OF MAINTENANCE DEPARTMENT

E. A. COLLIER, *Maintenance Engineer*

Maintenance of the essential highway facilities has been performed during the past two years in a manner to permit the free flow of traffic with safety. Wartime shortages of men, lumber, steel, new equipment, batteries, and repair parts persist over a year after the end of hostilities and have prevented the full performance of some desirable work, such as, snow removal on recreational roads and the replacing and painting of guard fences. Practically no betterment work or building construction was undertaken in 1945 and only about one-half the budgeted amounts could be constructed in 1946. Some shortages have been relieved, such as, gasoline, tires, tank cars, and asphalt.

The number of maintenance employees in September, 1946, was 1,622 which is still 16 per cent below the number in September, 1941. Many of former employees have returned from the armed services and have greatly increased the output of the maintenance forces. Labor-saving equipment has permitted equal output with fewer men than in 1941. Work hours for the shops and for section crews were reduced to a 44-hour week in September, 1945. Paving and oiling crews worked a 54-hour week in 1945 and a 48-hour week in 1946. Several small wage rate increases were granted during the bienninm as an off-set to increased living costs.

A flood occurred in the Willamette Valley in Christmas week of 1945. The Army engineers estimated the damage to property at $9,500,000. Highways were blocked, washouts occurred on the Willamette, and four lives were lost.

There has been a 31-mile increase during the past two years in mileage of highways maintained, bringing the total for 1946 to 7,171 miles.

Organization

The general maintenance work is performed by section crews, 130 in number, working under the supervision of 17 District Maintenance Superintendents. These crews carry on their work from strategically located headquarters, making

routine repairs, plowing snow, sanding slippery pavements, removing slides, fallen rocks, and trees, and patrolling their sections during stormy weather. They are alert at all times to give prompt attention to the needs of the roads and to the safeguarding of traffic. They are the representatives of the Highway Department most often contacted by residents and travelers.

Paving, oiling, bridge repair and other extra gang crews are organized independently of the section crews to perform their particular types of repair work.

The District Maintenance Superintendents organize and supervise the crews and equipment, order materials and supplies, and in general, handle all operations in their districts under the direction of the five Division Engineers.

In addition to general maintenance work by state forces, special maintenance jobs, such as reoiling and repainting of major bridges, are done by contract. Crushed rock is purchased from commercial plants as needed or produced by contract.

Maintenance of Pavements and Bituminous Surfacings

Paving crews, operating ten portable paving plants, placed a total of 88,596 tons in 1945 at a cost of $8.05 per ton. In 1946 the total will be approximately 99,800 tons at an average cost of $8.90 per ton.

Unit Oiling Costs for 1945

WORK		TOTAL COST		MATERIAL COST	
Specification	Miles	Per Mile	Per Sq. Yd.	Rock Cu. Yd.	Oil Per Ton F. O. B. Cars
0-31	53	$ 572	.049	$1.59	$17.90
0-30	179	944	.080	2.05	19.46
D. O.-30	291	1,210	.101	1.89	17.85
0-9	48	2,100	.189	1.88	17.28
0-11	12	3,550	.302	2.24	18.58

Cost per mile has been adjusted to 20-foot width.

Cost Percentages: For labor, 26%; asphalt, 30%; rock, 32%; equipment and supplies, 12%.

This type of patching with hot asphaltic concrete has proved most effective on all types of surfaces, both for the repair of breaks and for the restoration of smooth riding surface. Tractor

loaders to handle aggregates, and improvements to plants, have permitted increase in output with reduction in the number of men.

Five oil crews applied 3,640,000 gallons of road oil in 1946 and 2,992,000 gallons in 1945. This year the paving plants and oil crews, working a 48-hour week, surpassed any previous year's output, even for the years when the crews worked a 54-hour week.

Bridge Maintenance

The maintenance and repair of some 2,400 bridges on the State Highway System was continued during the biennium by 16 bridge repair crews severely depleted in men and further handicapped by War Production Board priority restrictions on materials.

The critical shortages of lumber and of skilled workmen have limited the operations of the bridge crews to the most essential phases of maintenance and required considerable "cobbling up" of many timber bridges now nearing the end of their service lives. These same handicaps made necessary the performance by contract of four or five of the larger bridge painting and reconditioning jobs.

The State purchased the Astoria-Megler ferry on June 1, 1946, at a cost of $163,000 and has since that date operated it as a toll ferry. Increasing traffic indicates a need to build or buy another ferry boat in 1947. The State contracts the operation of two other ferries, at Wilsonville and at Enegren, on which no tolls are charged.

Maintenance of Buildings

The State owns five division headquarters buildings, 12 district headquarters buildings, 68 section headquarters buildings, four equipment repair shops, 50 truck scales and scale houses, and many park buildings. The maintenance of these buildings is performed by bridge crew extra gangs.

The State also rents 45 section maintenance buildings, the majority of which are inadequate. Plans have been prepared for the construction of a number of new maintenance buildings, and sites on which to construct them have been purchased but

One of the state-owned ferry boats plying between Astoria, Oregon, and Megler, Washington.

Reconstruction operations on Oregon Coast Highway in the vicinity of Agate Beach in Lincoln County.

present building restrictions and material and man shortages have delayed their construction, either by contract or state force.

Truck Load Inspection

The Truck Load Inspection Division of the Maintenance Department was started in 1941. There are employed in it a total of 32 men. Its operation has resulted in a more serious endeavor by log haulers to conform with legal load limitations. The following is a brief summary of inspections made:

	1944		1945	
	Total Loads	Per Cent of Total	Total Loads	Per Cent of Total
Total loads weighed	187,471	100.0	136,638	100.0
Total loads under 54,000 pounds	82,175	43.8	57,028	41.7
Total loads 54,000-61,000 pounds	89,895	48.0	67,058	49.1
Total loads over 61,000 pounds	15,401	8.2	12,552	9.2
Total violations	4,441	2.37	4,606	3.37
Fines resulting	$58,802		$78,112	

Some special betterment jobs have been performed to enable the hauling of longer loads without encroachment on the left hand traffic lane as on the Necanicum Highway north of Wheeler, on the Coos Bay-Roseburg Highway east of Coquille, and rounding street corners in Forest Grove.

In connection with its program of truck load inspection, the Highway Commission, in May, 1945, adopted a policy authorizing the granting of permits for the transportation of long logs to a maximum overall length of 80 feet, provided that no part of the equipment or load encroaches on the opposing traffic lane. To determine the maximum safe length that can be hauled, a number of test runs have been made over various highways. From these runs, records have been compiled which are used as a basis for the issuance of permits for over-length loads.

Slides

Slides are one of the major maintenance problems, particularly on newly constructed sections. These movements of earth and rock are generally caused by water seeping on or above an inclined impervious strata which reduces the coefficient of friction to the point of instability. During location

and construction effort is made to provide adequate drainage facilities and to avoid conditions favorable to slides, but complete avoidance of slides is impossible. Existing slides are investigated by test shafts and test borings and are drained to prevent their movement.

At a point on the Columbia River Highway a short distance east of Multnomah Falls, a high and steep slope of broken rock and dirt became super-saturated with water after continued heavy rains, and an avalanche developed with the result that an estimated 350,000 cubic yards catapulted into the Columbia River taking with it sections of the highway and the paralleling railroad. The slope area affected is now being reshaped by contract in an effort to avoid further breaks.

South of the Siskiyou Summit on the Pacific Highway several large slides have continued to cause trouble. It is planned to construct a bridge at one of these large slides, and in two others the unstable material has been removed down to solid foundation and a new rock fill placed. This should eliminate all difficulty at these locations.

On the South Santiam Highway considerable slide material has been moved by contract and small line revisions made to avoid the moving ground. At Hogg Rock near the summit where snow slides have caused trouble in previous years, the roadbed is being widened materially by contract, and it is hoped the additional width will reduce the hazard to traffic from this type of slide.

Slides on the Sunset Highway have been practically cured and little trouble has occurred during the past two years.

There is on the Wilson River Highway near the summit a slide area still active which it is hoped to control by a drain tunnel during the next year.

Signs, Signals and Traffic Lines

The work of installing and maintaining signs and signals and the painting of traffic lines is performed by state crews under the supervision of an Assistant Maintenance Engineer. The yellow traffic stripe down the center of the highway is very popular with motorists and very important for traffic safety. Four striping crews were operated during 1946. Amid

current shortages and higher prices, there is a hopeful sign in the price of lacquer, this price having dropped materially.

Electrical crews install and maintain traffic signals and lighting facilities for the illumination of tunnels, bridges, ferries, and highway junctions.

State Maintenance on City Streets

During 1946 some of the smaller cities were assisted with their maintenance of city streets on heavy truck routes not on state highways. Highway crews patched pavements, reoiled surfacings, and did other repair work. The work was limited to towns under 5,000 population and to those streets showing material damage from log truck haul where the city was financially unable to assume the entire cost. The expenditures for this type of work are estimated at $40,000 for the State and $9,100 by the Cities. Each request from a City for this type of work was investigated, and the Commission examined the report, authorizing the work or denying the request.

Equipment

The Maintenance Department furnishes and repairs all highway department equipment. Rent is charged on each piece to cover depreciation, repair, and maintenance. Repairs are made at four shops located at Salem, La Grande, Klamath Falls, and Coquille. Each shop is in charge of a Superintendent under the direction of the Equipment Superintendent at Salem. Supplies and parts are purchased, stored, and dispensed by the storerooms operated in connection with the four shops.

In normal times the Department requires about 60 new dump trucks per year and other equipment in proportion, but during the war and at present it has been necessary to prolong the life of equipment by extensive overhauling and repairs. It will be necessary to purchase considerable equipment during the next year. Some equipment has been purchased from the War Assets Administration during the past year.

Cost Statements

Itemized statements, showing the "per mile" cost of maintenance for both the primary and secondary systems during each of the calendar years 1944 and 1945 and showing the total mileage maintained, appear in accompanying tables.

TABLE XIX

Costs of Maintaining Primary State Highways
Calendar Year 1944

Kind of Work	General Maintenance Charges	Special Maintenance Charges	Total Maintenance Charges	Miles Maintained	Cost Per Mile
Surface					
Concrete pavement repairs	$ 91,590.63	$	$ 91,590.63	337	$272
Asphaltic pavement repairs	145,969.34		145,969.34	529	276
(a) Material stockpiled		7,504.65	7,504.65	529	14
Bituminous macadam repairs	443,492.66		443,492.66	1,223	363
(a) Material stockpiled		276,138.51	276,138.51	1,223	226
Oiled macadam repairs	880,068.01		880,068.01	2,324	379
(a) Material stockpiled		643,378.00	643,378.00	2,324	277
Untreated and graded, repairs	59,050.41		59,050.41	387	153
(a) Material stockpiled		27,602.67	27,602.67	387	71
Base and subbase repairs	7,789.48		7,789.48		
Shoulders					
Blade, patch, re-treat	146,903.53		146,903.53		
Sidewalks, islands, curbs	3,173.67		3,173.67		
Drainage					
Ditches	221,307.08		221,307.08		
Drainage tunnels	24,662.72		24,662.72		
Pipe culverts, siphons, flumes	27,431.30		27,431.30		
Structures					
Box culverts and bridges 20 feet and under in length	10,934.97		10,934.97		
Bridges longer than 20 feet	127,641.84	64,887.22	192,529.06		
Guard fence and sight posts	28,019.21		28,019.21		
Tunnels, roadway	7,208.95		7,028.95		
Retaining walls, dikes, etc.	2,382.63		2,382.63		
Roadbed and Right of Way					
Remove weeds, brush and debris	194,367.04		194,367.04		
Landscaping	10,227.89		10,227.89		
Slides, roadbed and slopes	109,780.36		109,780.36		
Right of way fence, mileposts	1,401.04		1,401.04		
Road approaches	14,854.75		14,854.75		
Traffic Service					
Traffic signals	9,572.37		9,572.37		
Signs and highway markers	58,089.10		58,089.10		
Traffic lines	84,996.00		84,996.00		
Snow removal	144,915.68		144,915.68		
Sanding slippery pavement	65,097.34		65,097.34		
Highway water: flag, patrol, tow	1,160.37		1,160.37		
High water: flag, patrol, tow	1,160.37		1,160.37		
Highway illumination	8,338.95		8,338.95		
Road magnet operation	2,356.21		2,356.21		
Sub-Total	$2,932,783.53	$1,019,511.05	$3,952,294.58		
Maintenance superintendence	96,545.29		96,545.29		
Totals	$3,029,328.82	$1,019,511.05	$4,048,839.87	4,800	$844

TABLE XX

Costs of Maintaining Primary State Highways
Calendar Year 1945

Kind of Work	General Maintenance Charges	Special Maintenance Charges	Total Maintenance Charges	Miles Maintained	Cost Per Mile
Surface					
Concrete pavement repairs	$ 104,891.20	$	$ 104,891.20	338	$310
Asphaltic pavement repairs	226,233.02	.....	226,233.02	528	428
Bituminous macadam repairs	421,339.03	.....	421,339.03	1,223	345
Oiled macadam repairs	1,031,934.56	.....	1,031,934.56	2,324	444
Untreated and graded, repairs	69,881.25	4,434.86	74,316.11	394	189
Base and subbase repairs	8,463.40	.....	8,463.40	.....	.....
Shoulders					
Blade, patch, re-treat	201,528.31	.....	201,528.31	.....	.....
Sidewalks, islands, curbs	3,601.29	.....	3,601.29	.....	.....
Drainage					
Ditches	250,924.29	5,933.82	256,858.11	.....	.....
Drainage tunnels	16,864.25	.....	16,864.25	.....	.....
Pipe culverts, siphons, flumes	42,048.94	.....	42,048.94	.....	.....
Structures					
Box culverts and bridges, 20 feet and under in length	19,136.71	.....	19,136.71	.....	.....
Bridges longer than 20 feet	122,735.12	27,205.37	149,940.49	.....	.....
Guard fence and sight posts	28,885.38	.....	28,885.38	.....	.....
Tunnels, roadway	113.47	.....	113.47	.....	.....
Retaining walls, dikes, etc.	3,729.23	.....	3,729.23	.....	.....
Roadbed and Right of Way					
Remove weeds, brush and debris	199,109.89	.....	199,109.89	.....	.....
Landscaping	14,187.13	.....	14,187.13	.....	.....
Slides, roadbed and slopes	137,882.54	33,591.56	171,474.10	.....	.....
Right of way fence, mileposts	2,605.76	.....	2,605.76	.....	.....
Road approaches	29,289.84	.....	29,289.84	.....	.....
Traffic Service					
Traffic signals	6,910.15	.....	6,910.15	.....	.....
Signs and highway markers	52,672.28	.....	52,672.28	.....	.....
Traffic lines	100,851.88	.....	100,851.88	.....	.....
Snow removal	184,293.57	.....	184,293.57	.....	.....
Sanding slippery pavement	77,370.09	.....	77,370.09	.....	.....
High water: flag, patrol, tow	1,970.85	.....	1,970.85	.....	.....
Highway illumination	9,442.49	.....	9,442.49	.....	.....
Road magnet operation	1,800.23	.....	1,800.23	.....	.....
Sub-Total	$3,370,696.15	$ 71,165.61	$3,441,861.76	.....	.....
Maintenance superintendence	99,494.02	.....	99,494.02	.....	.....
Totals	$3,470,190.17	$ 71,165.61	$3,541,355.78	4,807	$737

Note: The cost of all rock used this year is included under "General Maintenance". Previous years showed costs under "Special Maintenance" for rock placed in stockpiles.

TABLE XXI

Costs of Maintaining Secondary State Highways
Calendar Year 1944

Kind of Work	General Maintenance Charges	Special Maintenance Charges	Total Maintenance Charges	Miles Maintained	Cost Per Mile
Surface					
Concrete pavement repairs	$ 5,307.74	$	$ 5,307.74	45	$118
Asphaltic pavement repairs	24,477.23		24,477.23	141	174
(a) Contract reconstruction		62,227.89	62,227.89	141	441
Bituminous macadam repairs	21,710.62		21,710.62	51	426
Oiled macadam repairs	290,291.72		290,291.72	1,048	277
(a) Material stockpiled		96,085.52	96,085.52	1,048	92
Untreated and graded repairs	165,475.62		165,475.62	1,065	155
(a) Material stockpiled		19,823.10	19,823.10	1,065	19
Base and subbase repairs	6,314.96		6,314.96	.....	.....
Shoulders					
Blade, patch, re-treat	29,091.96		29,091.96	.....	.....
Sidewalks, islands, curbs	127.68		127.68	.....	.....
Drainage					
Ditches	71,326.59		71,326.59	.....	.....
Drainage tunnels	485.50		485.50	.....	.....
Pipe culverts, siphons, flumes	12,152.65		12,152.65	.....	.....
Structures					
Box culverts and bridges, 20 feet and under in length	8,990.22		8,990.22	.....	.....
Bridges longer than 20 feet	97,831.21	4,438.30	102,269.51	.....	.....
Guard fence and sight posts	3,115.06		3,115.06	.....	.....
Retaining walls, dikes, etc.	1,993.18		1,993.18	.....	.....
Roadbed and Right of Way					
Remove weeds, brush and debris	48,036.38		48,036.38	.....	.....
Landscaping	7.06		7.06	.....	.....
Slides, roadbed and slopes	30,016.52		30,016.52	.....	.....
Right of way fence, mileposts	556.39		556.39	.....	.....
Road approaches	6,040.18		6,040.18	.....	.....
Traffic Service					
Traffic signals	95.45		95.45	.....	.....
Signs and highway markers	16,129.34		16,129.34	.....	.....
Traffic lines	10,211.11		10,211.11	.....	.....
Snow removal	28,696.46		28,696.46	.....	.....
Sanding slippery pavement	3,348.98		3,348.98	.....	.....
High water: flag, patrol, tow	621.94		621.94	.....	.....
Highway illumination	186.91		186.91	.....	.....
Road magnet operation	924.50		924.50	.....	.....
Sub-Total	$ 883,563.16	$ 182,574.81	$1,066,137.97	.....	.....
Maintenance superintendence	29,082.93		29,082.93	.....	.....
Totals	$ 912,646.09	$ 182,574.81	$1,095,220.90	2,350	$466

TABLE XXII

Costs of Maintaining Secondary State Highways
Calendar Year 1945

Kind of Work	General Maintenance Charges	Special Maintenance Charges	Total Maintenance Charges	Miles Maintained	Cost Per Mile
Surface					
Concrete pavement repairs	$ 13,999.27	$	$ 13,999.27	46	$304
Asphaltic pavement repairs	27,544.80	.....	27,544.80	141	195
Bituminous macadam repairs	21,174.79	.....	21,174.79	51	415
Oiled macadam repairs	372,546.59	.....	372,546.59	1,060	351
Untreated and graded, repairs	193,689.42	.....	193,689.42	1,065	182
Base and subbase repairs	7,310.40	.....	7,310.40	.....	.....
Shoulders					
Blade, patch, re-treat	27,057.74	.....	27,057.74	.....	.....
Sidewalks, islands, curbs	211.03	.....	211.03	.....	.....
Drainage					
Ditches	80,376.06	.....	80,376.06	.....	.....
Drainage tunnels	561.66	.....	561.66	.....	.....
Pipe culverts, siphons, flumes	14,207.46	.....	14,207.46	.....	.....
Structures					
Box culverts and bridges, 20 feet and under in length	9,326.35	.....	9,326.35	.....	.....
Bridges longer than 20 feet	55,069.57	.....	55,069.57	.....	.....
Guard fence and sight posts	962.96	.....	962.96	.....	.....
Retaining walls, dikes, etc.	382.89	.....	382.89	.....	.....
Roadbed and Right of Way					
Remove weeds, brush and debris	58,133.53	.....	58,133.53	.....	.....
Landscaping	87.47	.....	87.47	.....	.....
Slides, roadbed and slopes	17,703.43	.....	17,703.43	.....	.....
Right of way fence, mileposts	442.70	.....	442.70	.....	.....
Road approaches	7,069.05	.....	7,069.05	.....	.....
Traffic Service					
Traffic signals	758.10	.....	758.10	.....	.....
Signs and highway markers	13,359.98	.....	13,359.98	.....	.....
Traffic lines	9,196.05	.....	9,196.05	.....	.....
Snow removal	36,294.63	.....	36,294.63	.....	.....
Sanding slippery pavement	4,505.75	.....	4,505.75	.....	.....
High water: flag, patrol, tow	1,400.92	.....	1,400.92	.....	.....
Highway illumination	248.64	.....	248.64	.....	.....
Road magnet operation	953.30	.....	953.30	.....	.....
Sub-Total	$ 974,574.54	$ None	$ 974,574.54	.....	.....
Maintenance superintendence	28,767.85	.....	28,767.85	.....	.....
Totals	$1,003,342.39	$ None	$1,003,342.39	2,363	$425

Note: The cost of all rock used this year is included under "General Maintenance". Previous years showed costs under "Special Maintenance" for rock placed in stockpiles.

One of the steel tied-arch spans nearing completion in a multiple span structure over the Santiam River on U. S. 99E north of Albany.

REPORT OF BRIDGE DEPARTMENT

G. S. PAXSON, *Bridge Engineer*

From the beginning of the period of this report until the end of the war with Japan in September, 1945, Bridge Department activities were confined to completion of construction work on projects, contracts for which had been awarded in the previous biennium, preparation of plans for and construction of structures on access road projects requested by the Federal government, emergency maintenance on existing structures of the highway system, and preparation of plans and specifications for projects planned for inclusion in the so-called postwar construction program. Soon after the war was over, the Federal government withdrew most of its restrictions of new construction and made available postwar funds for cooperation with the state in the construction of highway projects. The Bridge Department was able to call for bids immediately on several projects, plans for which had been prepared either before the beginning of the war or during the war years.

During the biennium 51 contracts involving 111 structures of all types, at an estimated cost of $1,942,123, were awarded. These are classified as to type of work as follows:

Number of Jobs	Type of Work	Estimated Cost
2	Street or bridge overhead lighting	$ 15,082
2	Highway-railroad grade separation structures	135,874
6	Miscellaneous maintenance, painting steel structures, etc.	114,035
5	Timber and war plant access road structures	39,421
96	New bridges and culverts	1,637,711

The two most important projects placed under contract in the biennium were:

Santiam River Bridge. This structure is on the realignment of the Pacific Highway between Salem and Albany. It was designed in accordance with the standards recently adopted for the national interstate highway system, of which the Pacific Highway is a part. The structure consists of three structural steel arches, a main span of 240 feet and side spans of 180 feet, with 200 linear feet of concrete viaduct approach on the north

end and 100 linear feet of concrete viaduct on the south end. The roadway deck has a width of 30 feet between curbs and a 3½-foot sidewalk is provided on each side. The structure is designed for loads of 20-ton trucks, followed by 16-ton trailers. Included with the river bridge are 10 trestle bridges across overflow channels and minor streams which cross the highway in the section under improvement. The contract for this project was awarded to C. J. Montag and Sons on May 29, 1945, at a price of $545,923.50. Completion of the work is expected early in the summer of 1947.

Arthur Street Overcrossing. This structure is on the Harbor Drive project in Portland where that project crosses Arthur Street. The total length of the structure is 1,047 feet, of which 715 linear feet is bridge and 332 linear feet consists of retaining walls and embankment. The three central spans over Arthur Street are structural steel girders, and the remainder of the structure is concrete viaduct. Foundation conditions are difficult because of the existing embankment across Marquam Gulch, which has a maximum depth of approximately 90 feet. Steel piles were driven through this uncertain material into solid ground. The project includes a ramp to carry northbound traffic from the Ross Island Bridge to Harbor Drive. The contract for this project was awarded to Marine Contractors, Inc., on December 27, 1945, at a price of $269,209.70. Completion of the project is expected early in 1947.

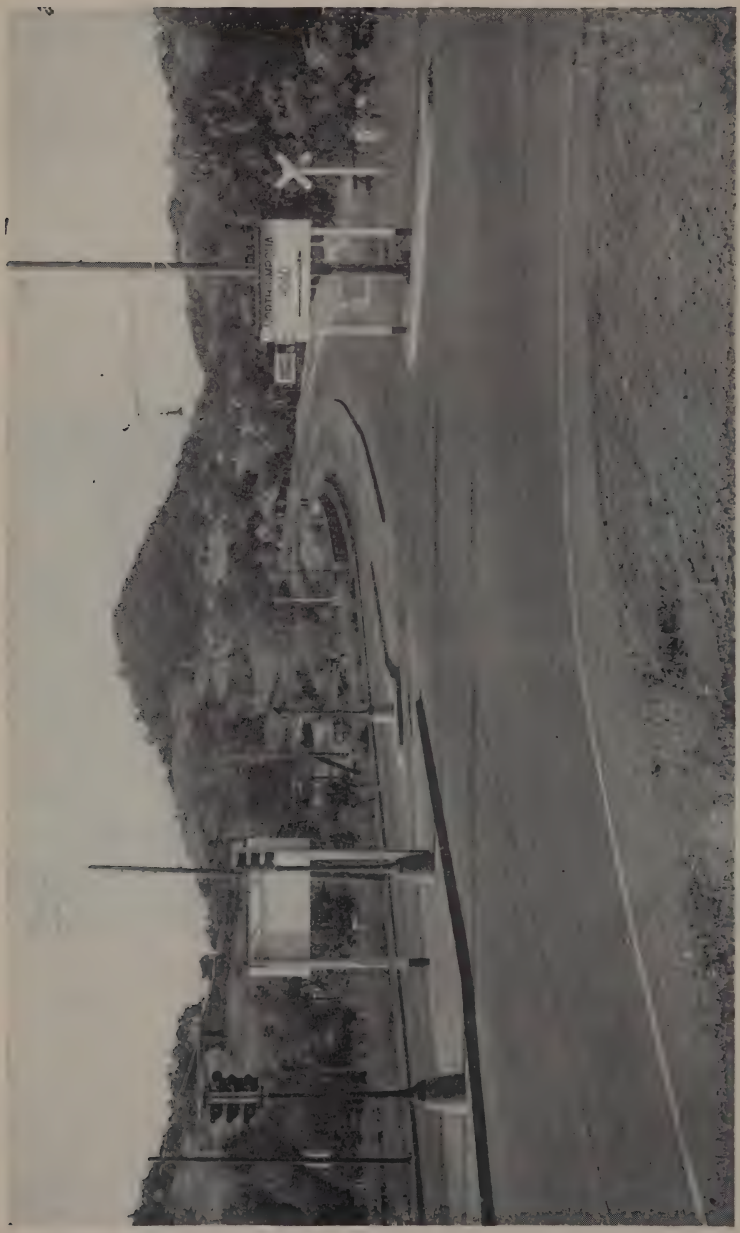
In addition to the above, plans and specifications were prepared for 18 projects estimated to cost $1,365,123, on which bids for construction were called for but for which contracts were not awarded. On 14 projects the bids were rejected, as they were considered too high, and on four no bids were received.

The Bridge Department has continued to give technical aid to the counties on bridge problems, and has in this biennium prepared plans and specifications for five county jobs estimated to cost $130,180.

The inventory of bridges on county roads not under the jurisdiction of the Highway Commission, which was sponsored by the Federal government through the Planning Survey Sec-

tion of the Public Roads Administration in 1940, has been continued through this biennium, although the work has been delayed considerably through the lack of personnel to direct the work. To date, the inventory has been completed in 13 counties, and partially completed in four additional counties. Approximately 5,100 structures have been logged, measured up, load rated and catalogued.

Logging railroad crossing over the Willamette Highway in Klamath County.



Highway intersection and railway grade crossing on U. S. 99 in Roseburg with traffic signals actuated by approaching trains and by North Umpqua Highway vehicles.

REPORT OF TRAFFIC ENGINEERING DIVISION

F. B. CRANDALL, *Acting Traffic Engineer*

The Traffic Engineering Division, for organizational and budgetary purposes, is subdivided into two sub-organizational units, Traffic Engineering and Planning Survey. Of the two, Traffic Engineering is the parent unit, Planning Survey having had its inception in 1936 at which time, in cooperation wtih the Public Roads Administration, a continuing long-range program was inaugurated. The Planning Survey has been continued as a necessary phase in the intelligent administration of highway department activities. The two phases, Traffic Engineering and Planning Survey, are very closely integrated to the extent that Planning Survey operations furnish, in part, the basic information needed for proper analysis and action in the Traffic Engineering operations. Prior to the inception of the Planning Survey as a recognized unit of organization, the limited amount of what might be termed planning work was carried on as a part of the Traffic Engineering Division.

Traffic Engineering

Assignments coming to the Traffic Engineering Division range from such minor problems as investigations for parking restriction to long-range planning and programing of major arterials and traffic interchanges.

Of the many factual "tools" available to the Traffic Engineer, probably the most important and essential one is the traffic accident report, and proper analysis thereof. The complete analysis of traffic accidents is important not only for the value which may be derived from mass statistics but also the bearing which such information has on small unit studies and investigations looking to proper control measures for particular locations.

The accident reports as received by the Secretary of State's office are transmitted to the Traffic Engineering Division for processing. All items of information as contained in the accident report are coded and subsequently transferred to Hollerith punch cards. Such method allows for quick compilation of statistical summaries and those special factual correlations as may be required. Regular statistical reports are furnished

the Secretary of State monthly, quarterly, semi-annually, and annually, for the use of that office in its safety education activities; similar service is afforded the City of Portland, the cost of such service being reimbursable.

During the biennium covered there were a total of 88,968 reported accidents. In the processing of this number of reported accidents, some 174,000 Hollerith punch cards were prepared. With the lifting of travel restrictions in the latter part of the biennium, there was a sharp upward trend in the number of reported accidents. By way of comparison, during the six month period from January 1, 1946, to June 30, 1946, there were 29,016 accidents as against the highest total of accidents recorded in any previous six month period of 28,017 which latter was for the six month interval July 1, to December 31, 1941.

In the Traffic Engineering operations, accident statistics not only point the way to remedial measures which may be employed in the alleviation of particularly hazardous conditions, but also afford a very concrete measure of the efficacy of such remedial measures. An analysis is often made of a "before and after" comparison of accident experience in the instance of a particular traffic control installation. Such analysis is of inestimable value from the standpoint of adding to the store of knowledge and experience on which to make future decisions and provides a source of factual material which can be used to advantage in the course of public relation work, in acquainting the public with what can be done by tried and proven treatment for particular traffic conditions.

Investigations, recommendations, and preparation of plans for signal installations are functions of the division. The initiation of such projects may come about either as a consequence of outside request or may be instigated by the department. Certain basic warrants in the matter of vehicular and pedestrian volumes, accident experience, speeds, etc., are adhered to and control in the final decision with regard to a particular installation. With the sharp upward trend in traffic volume during the latter part of the biennium there was a corresponding increase in requests for signal installation. All such requests have been given due consideration and study.

Traffic signal equipment is still in short supply, as a consequence of which many commitments made to cities prior to and during the war remain to be fulfilled. Favorable recommendation for signal installations made during the biennium have added to the backlog of installations which cannot be consummated until such time as the necessary equipment is forthcoming. During the biennium, plans for signal installations were completed for fifteen intersections in seven cities; investigations and preliminary plans were made for an additional thirteen intersections in three cities. The foregoing is with respect to stop and go signals, as regards flashing beacon installation, some eleven requests were investigated and four installations made. The foregoing is exclusive of the many requests received and investigated but on which negative recommendations were made.

An increasing amount of time is given to the geometric design of highway traffic facilities, certain phases of which fall within the scope of the Traffic Engineering Division. Attention is given to plans for new facilities and construction projects as are prepared by the Construction Division, to the end that such projects incorporate a design which will afford safe and adequate capacity for the volume and character of traffic expected. Many intersectional channelization projects are initiated in the Traffic Engineering Division as the need therefore becomes apparent.

With the sharp increase in speeds of travel there has been an increasing need for speed zoning. Action in this direction comes under the jurisdiction of the State Highway Commission, in the instance of rural state highways, and under the jurisdiction of the State Speed Control Board in the case of public ways other than the rural state highway system. In either case, the Traffic Engineering Division makes the analysis, investigation and recommendation. Over and above the investigational work and submission of report, the Traffic Engineer functions as Secretary of the State Speed Control Board. During the biennium, some 35 miles were recommended for zoning and received confirmatory action by the State Highway Commission and the State Speed Control Board.

The organization and promotion of school safety patrols is carried on in cooperation with the Secretary of State's office. The Traffic Engineering Division makes the field investigation to determine in the first instance if the establishment of the patrol is warranted and feasible, and in the instance of a favorable recommendation supplies the necessary equipment, yellow helmets, Sam Brown belts, portable signs, and in addition supplies a manual of instruction which sets forth proper organizational procedures for the conduct of patrols. The Secretary of State cooperates in the matter of education, promotional and publicity work, by supplying speakers on request, safety film, and similar material. During the biennium some fifteen investigations were made of which six were accorded favorable recommendation and patrols were organized.

The Division has within its organization complete facilities in the way of International Business Machine punching and tabulating equipment. This type of equipment is used extensively in the treatment and analysis of large masses of statistics of such nature that manual summarization and analysis would be impractical and ineffective. Over and above the use made of this equipment in connection with accident analysis work, such projects as origin and destination studies, time studies, parking studies, etc., and similar work involving manipulation of a multiplicity of data is analyzed through this medium of mechanical summarization. As a service rendered, the truck weight data obtained on log trucks by the State Weighmaster is adapted to punch cards and monthly and yearly summaries compiled in addition to any special analyses that may be desired.

As an indication of the volume of work handled by I.B.M. equipment and personnel, during the biennium some 420,000 individual cards were punched. In addition to the above there were some 256,000 cards reproduced in instances where duplicate sets were required. For all operations, accident analysis, truck weight data and miscellaneous, a total of 362 summaries, tabulations, and listings were prepared.

In connection with laws and regulations, either existing or contemplated, and as many have to do with motor transport, the Traffic Engineering Division is called upon to supply perti-

nent factual information. Noteworthy in this connection is work performed in connection with activities of the Legislative Interim Committee on Motor Vehicle Taxation as appointed by the Governor, and which Committee has as its objective, a study of the tax structure looking to its possible revision such as will evolve a more equitable distribution of the tax burden as between the several beneficiaries. This Interim Committee was under the chairmanship of the late C. B. McCullough, Assistant State Highway Engineer, and subsequently, R. H. Baldock, State Highway Engineer.

A drafting force is maintained to care for the immediate needs of the division. Such drafting entails preparation of accident collision diagrams, detailed condition diagrams for intersections, channelized intersections and signal installations, illustrative drawings showing traffic flow, and standard designs of signal equipment, sign installations, etc. During the biennium, some 350 drawings or unit projects were completed.

Summing up the functions and objectives of Traffic Engineering, it may be said that throughout the period of the biennium the division has continued to scrutinize existing facilities looking to their improvement, particularly as regards safety and capacity as well as giving thought to projected plans looking to the same objectives. In approaching the varied problems, both minor and major, all factual information at the Traffic Engineer's disposal is brought to bear. Such factual data include accident experience, vehicular and pedestrian volume, horizontal and vertical alignment, sight distances, prevailing speeds, etc. All possible advantage is taken of the experience of not only this department, but that had by other states and national organizations. An appreciable part of division time, and more specifically the time of the Traffic Engineer and his immediate assistants, is taken up with public relations work, not only in making detailed presentation of proposed solutions to local, city and county groups, but in substantiating such solutions by citing comparable conditions wherein similar treatment has been effective.

Planning Survey

The Planning Survey has been maintained as a suborganizational unit in the Traffic Engineering Division since

its inception in 1936. This phase of operation is of prime interest to the Public Roads Administration and there has been a progressive broadening of the project items included. Much of the work as carried on in the Planning Survey has been made a prerequisite to the approval of federal-aid construction projects on the program of the Public Roads Administration. As opposed to purely Traffic Engineering operations, the Planning Survey leans towards those long-range studies necessary to intelligent planning and design of facilities such as will properly meet the needs of motor transport both as regards desire for movement as well as the highway capacities which may be required years hence. Notwithstanding the prime objective of furnishing basic information for long-range planning, this phase of operation is a ready source of basic data used extensively in intelligent treatment of the multiplicity of problems which in the first instance fall in the Traffic Engineering category.

Funds for Planning Survey operations are derived from two sources: State Highway moneys and Federal funds. Of the total federal-aid funds allocated for construction, 1½ per cent thereof is allocated for Planning Survey work. Such 1½ per cent funds are matched by State funds on the pro rata established for all federal-aid projects in the State. For the biennium there was a total of $151,000 allocated to this work which figure is inclusive of State and Federal funds.

One of the largest single work units, from a budgetary standpoint, is the program of regularly scheduled state-wide traffic counts. These audits are obtained at some 105 counting stations on the rural highway net and the data compiled and published in bulletin form at the close of each calendar year. The most recently published data is that contained in OSHD Technical Report 46-1 "Traffic Density Tables for 1945." Such a schedule has been maintained since the time of the very comprehensive state-wide Planning Survey of 1936-37. These continued yearly records have served as a medium of forecasting future traffic probabilities and also as control data in the factoring and adjustment of short-term counts taken at other locations on the road net.

Recognizing the increase in traffic problems in urban areas and consequently the need for traffic data in such areas, there was inaugurated at the beginning of 1946 a corresponding traffic audit program in thirty-three representative cities. Here again, such information as is obtained serves as a basis of adjustment of short-term counts in the urban areas in connection with more comprehensive studies which must be made looking toward signal installations, etc.

Supplementing information obtained from manual counts, is that derived from the five permanently installed automatic traffic counters located at strategic points over the highway net. These automatic traffic counters were installed in 1936-37 and have been in continuous operation since. This type of equipment furnishes a much more stable sample with respect to traffic volumes and it is regrettable that more of this type of equipment cannot be obtained from the manufacturers. At such time as this equipment is again placed on the market it is the intent to greatly augment the program of automatic traffic counter installations to permit a reduction in the number of manual counts now required.

The Road Inventory work, as is the case with many of the other phases of the Planning Survey, was a unit of work included in the program as initiated in 1936. There was no work performed during the war period; however, operations were reactivated in the beginning of 1946. The nature of the operations entails considerable field work, however, the acute shortage of transportation equipment has confined activities to a study of records on file in the department, supplemented insofar as possible with information gathered through correspondence and personal contact. At such time as transportation and field equipment becomes available, it is planned to relog the entire road net and bring the inventory to a current basis.

During the latter part of the biennium some preliminary work was done looking to a reactivation of City Street Inventory which, coupled with Rural Road Inventory, will give complete data on the network of public ways within the State. Among other purposes served by the road inventory work, both rural and city, has been the supplying of information such

as will permit preparation of currently corrected maps, both county and state maps as well as straight-line charts which latter are used extensively by various departments particularly as concerns construction and location.

A companion to the Road Inventory work is the Bridge Inventory. This work is handled by personnel of the Bridge Department with the funds therefor derived from Planning Survey moneys. The purpose of the Bridge Inventory work is to keep up-to-date records of bridge structures on all public ways, not only as regards their location and general type, but detailed information as to length of span, vertical and horizontal clearances, and detailed construction features.

A very comprehensive origin-destination and parking survey in the City of Portland was initiated late in the biennium and work is still in progress at this writing. This project was launched as a cooperative undertaking with the City of Portland, the Public Roads Administration, and the State participating. A total of $70,000 was allocated for the work, of which amount $10,000 was contributed by the City of Portland and the balance of $60,000 budgeted out of Planning Survey funds, this latter amount inclusive of State and Federal money. The fact that the City of Portland is the focal point of the larger traffic volumes, it follows that the greatest need and a great portion of the attention of the Department centers in this area. The intelligent planning of traffic facilities in and around Portland requires reasonably accurate information as to the desire for movement as well as terminal facilities. Information which will come out of the survey currently being conducted will supply this essential information. The techniques and procedures followed in the promulgation of the survey are those which have been employed in some forty-four major cities in the nation prior to instigation of the Portland survey and have proved most effective for this type of survey. The basic procedure is similar to that followed by the census bureau in obtaining population data; namely, canvassing of a selected sample of dwelling units and through contact by trained interviewers to determine travel habits of the people.

Sundry other origin-destination surveys of lesser scope than the Portland project were carried on during the bien-

nium. Included among such minor projects was an origin-destination survey in Baker in connection with a proposed grade separation project at crossing of the Union Pacific Railroad and Baker-Unity Highway. A short-term origin-destination survey was made along the proposed route of the Sunset Highway to determine desire for access to such a new facility and subsequently determination of warrant for traffic interchange structures along the route and the optimum location thereof. An origin-destination and timing study was conducted in the Independence-Salem area in conjunction with the proposed Polk-Marion County Bridge across the Willamette River at Independence.

The department as a whole is striving toward provision of those optimum transport facilities which will safely and adequately handle the traffic making use thereof. Pertinent question in this regard has to do with the total cost of bringing the entire system, many sections of which are substandard insofar as adequately meeting the demands is concerned, up to an optimum level of design. In this connection studies are carried on in the Planning Survey wherein estimates are made as to cost of bringing the substandard highway sections to an optimum level of capacity and good geometric design. An engineer from the Construction Division has been assigned to this work and the expense entailed derived from Planning Survey funds.

In summing up the planning survey work during the biennium, it may be stated that a transitionary period prevailed wherein efforts were made to reactivate the essential continuing studies as originally initiated in 1936. An increasing amount of attention has been directed toward studies in urban areas in view of Public Roads Administration's increased interest in this direction as exemplified in apportionment of a greater amount of money for the construction of arterial facilities in the cities. In common with other divisional operations of the department as a whole, difficulties are still being experienced in the matter of personnel and facilities for bringing operations up to an optimum level.

Gorge of the Deschutes River within Cove Palisades State Park, Jefferson County.

REPORT OF
LEGAL AND RIGHT OF WAY DEPARTMENT

J. M. DEVERS, *Chief Counsel*

A biennial report by an organization or state department such as the State Highway Department must necessarily have a large degree of sameness. The real purpose and all of the activities of the Highway Commission are involved in and directed to the location, construction, and maintenance of highways and the acquisition, development and conduct of public parks and other recreational and scenic places, hence each succeeding report must necessarily cover or deal with those subjects, incorporating, of course, such new approaches to those functions and powers as may have been discovered, developed, or adopted during the period covered by the report.

The Legal and Right of Way Department during the two years just ending has been engaged in the acquisition of real property for highway and park purposes and in the handling of necessary litigation connected with the work and activities of the entire Department, and in this respect differs little from the preceding bienniums.

Between July 1, 1944, and July 30, 1946, there have been purchased by the Legal and Right of Way Department the following number of real properties for the uses indicated:

No. of Parcels	Use	Cost
639	Right of Way	$ 568,433.05
44	Quarry and Gravel Pit	16,122.00
54	Stockpile sites	6,560.61
24	Parks	74,712.61
28	Miscellaneous	4,753.66
789	Totals	$ 670,581.93

The acquisition of real properties necessarily involves the preparation of options, deeds and vouchers, the procurement of title insurance and examination of titles, and much other detail which transactions of that character involve.

In addition to the work involved in the acquisition of the real properties as disclosed above, the Legal and Right of Way Department has handled the following matters:

Preparation of approximately 160 miscellaneous agreements and the examination and approving of 128 construction con-

tracts. During the period just closing the Department has been interested in 68 condemnation actions and has participated in several miscellaneous cases, three of which were in the United States District Court. The Department has also been interested in several suits to quiet title.

The Legal and Right of Way Department personnel consists of the following: J. M. Devers, Chief Counsel; G. W. Neuner and J. W. DeSouza, Assistant Counsels; I. M. Schannep, Assistant Attorney; A. B. Kneass, Real Property Manager; Harry G. Benson, William F. Collins, Rodney W. Cozad, Clifford L. Gardiner, Ray Landon, Mark D. McCallister, William S. McChesney, Donald L. Norlin, Clarence W. Parker and William H. Witt, Right of Way Agents; W. J. Minkiewitz and Esthel Benner, Real Property Office Men; and Florence Carter, Cecile Knox, Vivian Lewis, Alta Vivian Hester, Birdie D. Rees, Martha M. Smith, Margaret Maxine Tisdale, Anona Welch and Pauline Welch, Stenographers.

During the past two years the Commission has adhered to its policy with respect to control of access and has, in connection with the establishment of new highways or the relocation of existing highways, acquired to the greatest extent possible and consistent with good business a control of access which will permit the Commission to provide for the traveling public a reasonable degree of safety and convenience and at the same time preserve the capacity of the highway so that it may to the greatest possible degree serve the purpose for which it was constructed.

As this report goes to press there is pending a condemnation action by which the State seeks to acquire a large area of land adjoining Wallowa Lake for the purpose of the development of a recreational area which will be outstanding and unique. It is hoped that by the time our next biennial report is prepared we will be able to give in detail the character of the development of such area and the extent to which it is enjoyed by the general public. The area will be known as the Wallowa Lake Recreational Area.

REPORT OF MATERIALS DEPARTMENT

N. M. FINKBINER, *Engineer of Materials*

In the operation of the Highway Department, it is the duty of the Engineer of Materials to pass on the acceptability of all materials of construction. The materials used in the construction and maintenance of roads and bridges must pass the quality requirements of the specifications, when tested by the standard methods of the "American Association of State Highway Officials", or the "American Society for Testing Materials."

The data, on which the engineer bases his judgment of the suitability of the various materials, is supplied by tests made in the chemical and physical laboratories of the Commission, situated in the Engineering Laboratories Building at 2900 State Street, Salem. Here, well equipped laboratories manned by efficient technologists make the required tests which yield the necessary information. Tests are run on: asphalts (cements, cutbacks, and emulsions), bituminous mixtures, buttons and backgrounds used in reflectorized signs, cement, concrete cylinders, creosote, expansion joint fillers, ferrous and nonferrous metals and alloys, gravel, guardrail cable and posts, lumber and piling (green and treated), mineral filler, oil (for lubricating machinery), paints and lacquers and their ingredients, pipe (concrete and plain, and dipped galvanized iron), road oil, rock, sand, and soils.

The Materials Division has the responsibility of designing all of the paving mixes used by the Highway Department. From tests on samples of sand, gravel and hydraulic cement submitted from the field, hydraulic cement concrete mixes are set for pavements, bridges, sidewalks, curbs, catch basins and driveways. These mixes are designed to produce the proper strengths, which calculation and experience have shown to give satisfactory and economical results. Bituminous mixes are designed with a grade of asphaltic cement suitable for the climate conditions of the locality in conjunction with crushed rock or gravel, sand and filler. The mix is generally designed for maximum density within certain limits.

Inspection is a necessary concomitant of the work of the laboratory. Inspectors are stationed in Portland to sample

materials and products such as: paint, lacquer, tar, road oil, asphalt, cement, reinforcing steel and other materials which are stored or fabricated in the metropolitan area.

Asphalt and concrete plant inspectors are stationed at all concrete batching and asphalt paving plants to see that there is no unauthorized deviation from the mix as designed by the laboratory. One or two checkers work under each plant inspector to witness the weighing of the mixture and to make periodic granulometric analyses of the various sizes of aggregate.

A small laboratory research and investigation department was reinstalled in April, having been discontinued during the war. An investigation into the rate of hardening of asphaltic cement in pavements, which has been in interrupted progress over a number of years is about ready to be reported. A salt spray apparatus designed to give an accelerated test on preservative coatings on metal, has been assembled and is about ready for operation.

G. W. Harra is Assistant Engineer of Materials and C. F. Hagemann is office manager.

REPORT OF STATE PARKS DEPARTMENT

SAMUEL H. BOARDMAN, *State Parks Superintendent*

During the last months of 1945 there was abundant evidence that a considerable proportion of a war-weary people were in a mood to put aside their tasks and indulge in a holiday as soon as circumstances would permit. Sensing this, a previous census of park needs had been taken and budgeted in anticipation that material and labor for such purposes would be available. However, all such plans were frustrated by the disappointing conditions that arose, and the present biennium seeds with hopes for park betterments and new improvements still in abeyance.

Despite park inadequacies due to the considerable deterioration of facilities and physical improvements, park attendance has materially increased and park usage expanded, with local interest constantly growing. This fact combined with an increasing out-of-state interest and attendance, is overtaking if not actually outpacing their recently hindered developments. This will apply particularly to the coastal parks which continue to attract a majority of state park visitors.

With their wide perspectives, the coastal parks convey a singular impression of openness and alluring freedom of action; together with an opportunity to commingle with kindred spirits who also find pleasure on the open beaches which face in all its moods the inscrutable, but none the less, inviting sea.

Caretakers reports reflect a newly aroused interest in the scenic and geologic features of the interior state parks which had been partially dormant for some time. The John Day Fossil Beds State Park was visited by a number of scientists in 1946, presaging a renewed interest in these rich paleontological deposits, which from time to time reveal now fossilized forms of prehistoric life which date back ten to fifty millions of years, to ages beyond the ken of the human mind. These are the richest of Oregon's many natural scientific assets and are deserving of earnest attention.

State park history in 1946 was high-lighted by the entertainment of a caravan of some eighty persons, made up of national and state park executives and members of the National Conference of State Parks and interested associates,

Upper North Falls in Silver Creek Falls State Park, Marion County.

representing twenty-eight states. The pilgrimage began in southern California, and journeyed through the northern redwoods, to the Oregon line, where they were met by a delegation of Oregon state park officials and escorted up the Oregon Coast Highway. After five days in California, they spent September 29-30 and October 1, viewing Oregon's coastal parks, scenic highway points and sites of historic interest, under the guidance of state park officials, reaching as far north as Seaside, where the visit officially terminated with a banquet and round of speech making.

Those who were strangers to the Oregon coast were enthusiastically astonished at the almost continuous richness of its scenic values. They were also profuse in their encomiums of praise for the well conducted arrangements and cordial hospitality everywhere accorded them during their trip up the Oregon Coast.

Early in 1946 the state park organization was augmented by the addition of an assistant parks superintendent and a staff of landscape architects and draftsmen who were primarily engaged in roadside beautification, in various localities; particularly on the Portland water front, along the new Columbia River Highway east of Portland; in and around Albany and along a newly constructed section of the Oregon Coast Highway in and near Ocean Lake.

One member was assigned to the task of supervising and regulating the cutting and pruning of trees and shrubbery under power and telephone lines along the highways. Another member, with a small crew, re-daylighted the Columbia River Highway; opening old and creating new vistas of appealing scenery through the Columbia Gorge.

In 1945 a new feature of roadside beautification was undertaken in the abundant Oregon myrtle tree section of Coos County along the Coos Bay Highway between Coquille and Myrtle Point. This work was initiated by the employment of a competent person, who cleaned up the debris, and removed disfiguring trees and shrubbery from around the shapely myrtle wood trees within the right-of-way.

Following the preliminary demonstration of this beautifying process, local Chambers of Commerce and other civic organiza-

tions of the county became enthusiastic over the results. Property owners were encouraged to permit the parks department to clean up areas adjoining the highway where there were outstanding single trees or attractive groups of the pleasing, symmetrical myrtle trees. This roadside beautification work has brought into new prominence the unusual beauty of these often bee-hive shaped, trees and elicted many paeans of praise from the lovers of trees who have viewed them.

The acquisition of lands for park purposes during the biennium was of modest proportions. The total area acquired was only 1,315 acres. Seven tracts with a total of 318 acres were gifts to the State, and eight tracts aggregating 997 acres were purchased. The largest unit acquired was a 635 acre tract of wayside juniper trees, purchased from the United States through the State Land Board. This is situated on The Dalles-California Highway, between Redmond and Bend.

State park attendance was low in the 1943-1944 biennium with a total for all parks of 1,065,000 persons. Lincoln County parks entertained 140,000 and Silver Creek totaled 82,000 alone. In the 1945-46 period all parks reported 1,677,000; Lincoln County, 790,000 and Silver Creek alone, 239,000. The over-all estimate showing a 36 per cent increase for the later biennium. It was unofficially reported that on July 4, 1946, 11,439 persons in 2,790 cars "passed through the gates" at Silver Creek.

REPORT OF TRAVEL INFORMATION DEPARTMENT

MANLEY F. ROBISON, *Director*

Since establishment by legislative act in 1935, the Highway Commission's Travel Information Department has seen the value of Oregon's tourist crop grow from an estimated 25 million dollars annually to approximately 83½ million dollars in 1946. These figures are based on information gathered from visitors by actual traffic interviews and by direct mail questionnaires.

From its first advertising campaign in 1936 until Pearl Harbor, the department carried on an aggressive advertising campaign in national and regional magazines, as well as newspapers, resulting not only in nation-wide response but international interest as well. Information on Oregon and Oregon highways was sought in all parts of the globe.

During the war years, department activities were curtailed. No magazine nor newspaper advertising was authorized in 1943, but in 1944 limited institutional advertising was carried on to keep Oregon before prospective visitors as a postwar vacation destination.

As an accommodation for members of the armed forces in Oregon during 1943-44, the department provided 1,300,000 colored postcards which were mailed by service men and women throughout the USA. Direct requests for additional Oregon information as a result of the cards were heavy.

With the cessation of the war, lifting of gasoline rationing and other restrictions, travel showed an upward trend as early as October 1945. Plans for expanded activities were immediately placed underway by the department to prepare for the 1946 travel season, which, at that time, was predicted to be the heaviest on record.

Some magazine advertising was placed during the winter and early spring of 1945 and 1946 with the last advertisement appearing in Holiday magazine initial issue of March. No further advertising was authorized for the spring and summer of 1946 as it was deemed unnecessary to further promote Oregon as a vacation lure before a travel starved public. Inasmuch as only a limited amount of additional housing for out-of-state

visitors had been constructed during the war years, it was considered impractical to encourage travel when existing facilities would already be crowded by summer traffic. This action was justified by later developments, as travel was extremely heavy throughout the state. Surveys revealed that out-of-state interest in Oregon had trebled since prewar days, a fact which points to an even busier year on Oregon highways during 1947.

To keep pace with the growing tourist business, departmental activities were expanded during 1946 to provide additional services to the public. In April 1946 Mr. Harold B. Say, the department's first director, resigned to enter private business. He was succeeded by the writer who was formerly connected with the Portland Chamber of Commerce in travel promotion work.

An intrastate program was carried on during the spring of 1946 in cooperation with the Oregon Advertising Club and major chambers of commerce in the state. The program was centered about the tourist school idea, designed to prepare Oregon citizens to assist out-of-state visitors in enjoying Oregon to the fullest and to acquaint Oregonians further with the economic importance of the travel industry. A similar program for 1947 on a much larger scale was planned during 1946, reaching cities and towns in all sections of the state.

During the first nine months of 1946, there were approximately 60,000 requests for Oregon information, meaning a wide distribution of Oregon vacation folders. In addition, folders were distributed among chambers of commerce, automobile clubs and travel agencies throughout the nation to replenish rack supplies as much as possible.

Many pictures and numerous special articles and stories were prepared for use throughout the country and foundations were laid for expanded operations along these lines in 1947.

During the war years, because of film shortages, few black and white pictures of Oregon scenes and fewer pictures in color could be taken by Ralph Gifford, department photographer. However, during 1946 Mr. Gifford was able to bring photographic files up to date on different sections of the

state in black and white. Many color pictures were also taken. The latter were used to good advantage in color advertisements published during the autumn of 1946.

The photographic department has near completion a color moving picture of Oregon state parks, showing glimpses of numerous of the state park units. The film, "The New Oregon Trail," completed in 1941 has received wide distribution since its completion. Through duplicate prints, it has been shown to an estimated 10 million people in all parts of the United States and some foreign countries. Preliminary work has been started on a new general Oregon film, as well as reels on the Oregon coast, flowers, and hunting and fishing.

In filling requests for folders, the department receives hundreds of inquiries seeking information on individual areas or subjects which require special letters in answer. Many of these are received from veterans and others seeking homes in Oregon.

The department also laid foundation plans to lengthen the travel season by encouraging visitors to come as early as they can in the spring and to visit Oregon during the Indian summer days of September and October. This is to be done through advertising schedules and general publicity efforts.

An advisory Committee, consisting of 13 members from the state at large, lays down the general policies and plans to be followed by the department in promoting travel to Oregon.

Members of the Committee are: John A. Laing, Dr. E. B. McDaniel, Arden Pangborn, Donald J. Sterling and W. D. B. Dodson of Portland; E. B. Aldrich of Pendleton; Hugh Ball of Hood River; R. R. Cronise of Albany; Frank Jenkins of Klamath Falls; Charles H. Reynolds of La Grande; Robert W. Ruhl of Medford; Arch B. Sanders of Coos Bay; and Wm. M. Tugman of Eugene.

Interesting ocean beaches border Ecola State Park in Clatsop County.

Section Three

FINANCIAL STATEMENTS

Covering the Fiscal Period
July 1, 1944, to June 30, 1946

AND

STATISTICAL INFORMATION

PERTAINING TO

State Highways and County Roads

IN THE

STATE OF OREGON

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Table No. 1

DETAILED SUMMARY OF INCOME AND EXPENDITURES

July 1, 1944, to June 30, 1946

INCOME

Classification	Receipts July 1, 1944, to June 30, 1945	Receipts July 1, 1945, to June 30, 1946	Total Receipts July 1, 1944, to June 30, 1946
State Funds:			
Motor vehicle license fees	$ 3,405,729.26	$ 3,266,785.48	$ 6,672,514.74
Gasoline tax	9,658,284.84	13,010,459.67	22,668,744.51
Diesel fuel tax	222,986.42	246,839.15	469,825.57
Motor transportation fees	1,891,126.55	2,014,629.98	3,905,756.53
Fines for traffic law violations	84,617.58	103,824.33	188,441.91
Astoria-Megler ferry receipts	.....	16,637.30	16,637.30
Receipts from rentals, discounts, etc.	3,091.60	10,262.52	13,354.12
Sub-totals, state funds	$15,265,836.25	$18,669,438.43	$33,935,274.68
Less Contributions:			
To state police	$ 424,772.50	$ 338,708.71	$ 763,481.21
To counties	2,340,748.48	2,598,427.65	4,939,176.13
To cities	745,461.30	827,524.73	1,572,986.03
Sub-totals, contributions	$ 3,510,982.28	$ 3,764,661.09	$ 7,275,643.37
Total net income, state funds	$11,754,853.97	$14,904,777.34	$26,659,631.31
Cooperative Funds:			
County cooperative funds	$ 8,550.00	$ 1,550.00	$ 10,100.00
Federal cooperative funds	3,547,230.89	1,116,284.52	4,663,515.41
Miscellaneous cooperative funds	30,973.72	385.08	31,358.80
Sub-totals, cooperative funds	$ 3,586,754.61	$ 1,118,219.60	$ 4,704,974.21
Grand total net income	$15,341,608.58	$16,022,996.94	$31,364,605.52
Balance on hand, July 1, 1944	*7,969,765.90	.....	*7,969,765.90
Total funds available	$23,311,374.48	$16,022,996.94	*$39,334,371.42

* Includes $350,000 in pay roll revolving fund.

Table No. 1—Continued

EXPENDITURES

Classification	Expended July 1, 1944, to June 30, 1945	Expended July 1, 1945, to June 30, 1946	Total Expended July 1, 1944, to June 30, 1946
Capital Outlays:			
Construction, primary highways	$ 919,543.07	$ 2,498,721.53	$ 3,418,264.60
Construction, secondary highways	1,353,809.11	530,217.00	1,884,026.11
Construction, county roads	145,054.48	126,684.23	271,738.71
Cooperation in forest road work		100,000.00	100,000.00
Minor betterments, primary	67,340.70	111,057.27	178,397.97
Minor betterments, secondary	9,559.84	87,554.60	97,114.44
Surveys and engineering, county work	306,892.07	317,744.96	624,637.03
Real property negotiation expense	41,213.03	50,384.02	91,597.05
Purchase of rights of way, quarries, etc.	251,933.05	343,936.27	595,869.32
Purchase of parks	45,981.58	28,731.03	74,712.61
Improvements in parks	24.00	11,756.20	11,780.20
Improvements at maintenance stations	9,076.64	26,891.51	35,968.15
Improvements of other properties	Cr. 1,352.91	Cr. 1,975.11	Cr. 3,328.02
Equipment purchases, less credits for sales and depreciations	Cr. 78,381.86	119,274.29	40,892.43
Sub-totals, capital outlays	$ 3,070,692.80	$ 4,350,977.80	$ 7,421,670.60
Maintenance:			
Special maintenance, primary	$ 456,954.85	$ 91,503.30	$ 548,458.15
Special maintenance, secondary	168,138.98	15,784.55	183,923.53
General maintenance, primary	3,172,816.56	3,697,222.37	6,870,038.93
General maintenance, secondary	855,901.93	1,138,674.00	1,994,575.93
Maintenance of county roads, signs, etc.	14,623.02	8,096.22	22,719.24
Maintenance of city streets	3,225.63	2,385.47	5,611.10
District maintenance superintendence	124,971.03	134,752.91	259,723.94
Sub-totals, maintenance	$ 4,796,632.00	$ 5,088,418.82	$ 9,885,050.82
Operation:			
Administration and general supervision	$ 452,185.10	$ 556,837.58	$ 1,009,022.68
Planning and traffic surveys	55,866.03	87,733.30	143,599.33
Travel information bureau	23,134.78	78,422.95	101,557.73
Radio communication system	11,824.87	10,574.48	22,399.35
Operation of parks	38,436.48	58,741.38	97,177.86
Operation of maintenance stations, R/W, etc.	486.47	5,458.25	5,944.72
Operation of drawbridges and ferries	81,921.07	89,070.39	170,991.46
Truck load inspection	77,946.24	96,113.59	174,059.83
Research and special investigation	1,586.56	6,861.80	8,448.36
Miscellaneous general expense	48,693.54	58,472.98	107,166.52
Sub-totals, operation	$ 792,081.14	$ 1,048,286.70	$ 1,840,367.84
Service and clearing accounts	115,806.84	385,539.22	501,346.06
Bond interest and maturities	1,957,829.52	1,448,928.75	3,406,758.27
Totals	$10,733,042.30	$12,322,151.29	$23,055,193.59

Table No. 2—SUMMARY OF EXPENDITURES JULY 1, 1944, TO JUNE 30, 1946

Classification of Expenditures	Total Amount Expended	Cooperation in Expenditures			
		State	County	Federal Government	Miscellaneous Contributors
Construction, primary highways	$ 3,418,264.60	$ 774,714.84	$ 3,100.00	$ 2,640,449.76	$
Construction, secondary highways	1,884,026.11	325,387.04		1,558,639.07	
Construction, county roads	271,738.71	Cr. 124,259.86	7,000.00	357,639.77	31,358.80
Cooperation in forest road work	100,000.00	100,000.00			
Minor betterments	275,512.41	275,512.41			
Surveys and engineering, county work	624,637.03	611,386.73		13,250.30	
Real property negotiation expense	91,597.05	91,597.05			
Purchase of rights of way, quarries, etc.	595,869.32	584,513.06		11,356.26	
Purchase of parks	74,712.61	74,712.61			
Improvements in parks	11,780.20	11,780.20			
Improvements at maintenance stations	35,968.15	35,968.15			
Improvements of other properties	Cr. 3,328.02	Cr. 3,328.02			
Equipment purchases, sales and depreciation	40,892.43	40,892.43			
Sub-totals, capital outlays	$ 7,421,670.60	$ 2,798,876.64	$ 10,100.00	$ 4,581,335.16	$ 31,358.80
Special maintenance, primary	548,458.15	548,458.15			
Special maintenance, secondary	183,923.53	183,923.53			
General maintenance, primary	6,870,038.93	6,861,761.22		8,277.71	
General maintenance, secondary	1,994,575.93	1,994,575.93			
Maintenance of county roads, signs, etc.	22,719.24	20,406.22		2,313.02	
Maintenance of city streets	5,611.10	2,185.97		3,425.13	
District maintenance superintendence	259,723.94	259,723.94			
Sub-totals, maintenance	$ 9,885,050.82	$ 9,871,034.96	$	$ 14,015.86	$
Administration and general supervision	1,009,022.68	1,009,022.68			
Planning and traffic surveys	143,599.33	75,434.94		68,164.39	
Travel information bureau	101,557.73	101,557.73			
Radio communication system	22,399.35	22,399.35			
Operation of parks	97,177.86	97,177.86			
Operation of maintenance stations, R/W, etc.	5,944.72	5,944.72			
Operation of drawbridges and ferries	170,991.46	170,991.46			
Truck load inspection	174,059.83	174,059.83			
Miscellaneous	115,614.88	115,614.88			
Sub-totals, operation	$ 1,840,367.84	$ 1,772,203.45	$	$ 68,164.39	$
Service and clearing accounts	501,346.06	501,346.06			
Bond interest and maturities	3,406,758.27	3,406,758.27			
Totals	$23,055,193.59	$18,350,219.38	$ 10,100.00	$ 4,663,515.41	$ 31,358.80

Table No. 3

MILEAGES OF HIGHWAY CONSTRUCTION WORK PERFORMED

by the

STATE HIGHWAY COMMISSION

New Construction and Reconstruction

Highway System and Year	Concrete Pavement (Miles)	Bituminous Pavement (Miles)	Bituminous Macadam (Miles)	Oiled Surfacing (Miles)	Rock-and Gravel Surfacing (Miles)	Grading (Miles)	Bridges Over 20 feet (No.)	Grade Separations (No.)
Primary:								
1917-1936	253.0	658.8	822.2	2,167.7	3,581.0	3,472.3	944	38
1937	26.3	13.8	85.5	114.0	140.7	142.2	18	6
1938	18.5	5.7	31.3	177.0	142.8	72.9	15	4
1939	2.3	2.3	.....	242.3	172.7	53.8	8	2
1940	24.9	6.1	42.8	170.3	166.0	62.4	32	5
1941	3.2	1.6	44.7	65.7	110.8	96.3	15	2
1942	17.1	9.7	38.9	51.1	104.2	95.0	31	1
1943	0.8	6.3	17.4	8.4	33.3	26.8	4	3
1944	2.8	8.5	7.3	11.5	23.0	18.3	15	.....
1945	.....	6.7	.....	12.0	12.1	0.3	3	.....
1946	.....	9.1	16.0	37.3	53.4	60.9	4	1
Totals	348.9	728.6	1,106.1	3,057.3	4,540.0	4,101.2	1,089	62
Secondary:								
1933-1936	3.4	1.5	16.8	110.5	143.6	152.4	71	5
1937	.....	.....	.....	95.6	26.8	7.2	2	2
1938	0.4	.....	.....	36.3	31.8	27.5	7	2
1939	0.2	.....	.....	137.3	61.6	44.0	3	.....
1940	.....	.....	4.9	65.6	47.5	58.7	3	.....
1941	4.2	.....	8.5	125.0	126.3	41.3	16	1
1942	0.5	1.7	.....	75.3	97.2	51.7	3	1
1943	.....	0.3	.....	6.0	9.1	6.3	.....	.....
1944	.....	6.2	.....	71.0	84.1	13.2	2	.....
1945	.....	3.6	.....	9.1	17.8	4.3	.....	.....
1946	.....	0.6	7.2	27.3	42.1	45.1	.....	.....
Totals	8.7	13.9	37.4	759.0	687.9	451.7	107	11
Other Roads:								
1935-1936	3.6	12.9	7.5	61.5	33.6	34.3	3	3
1937	.....	.....	.....	5.4	5.4	.....	.....	2
1938	0.1	.....	1.5	42.1	33.4	11.4	1	.....
1939	0.1	6.9	.....	26.4	17.9	18.7	.....	1
1940	0.5	.....	.....	24.5	32.7	24.0	1	.....
1941	0.3	2.6	6.5	19.3	28.9	21.0	1	.....
1942	2.5	6.4	13.9	23.2	38.1	36.2	7	.....
1943	0.1	0.5	.....	9.2	15.0	13.2	1	1
1944	.....	.....	3.4	12.2	21.8	19.3	5	.....
1945	.....	0.4	0.3	8.4	6.2	5.5	1	.....
1946	.....	.....	.....	16.4	6.9	4.1	.....	.....
Totals	7.2	29.7	33.1	248.6	239.9	187.7	20	7

Table No. 3—Continued

Resurfacing, Widening and Betterment

Highway System and Year	Pavement Resurfacing and Widening (Miles)	Non-skid Treatment of Pavement ((Miles)	Contract Re-oiling (Miles)	Rock and Gravel Resurfacing (Miles)	Grade Widening (Miles)
Primary:					
1917-1938	48.0	399.6	96.6	207.1	278.8
1939	.....	.....	75.2	21.7	42.6
1940	.....	.....	119.2	32.9	14.8
1941	.....	20.3	20.3	.....	10.0
1942	.....	.....	1.1	.....	6.6
1943	.....	.....	16.0	1.1	.....
1944	.....	.....	1.1	.....	.....
1945	.....	.....	.....	.....	.....
1946	2.0	.....	.....	.....	.....
Totals	50.0	419.9	329.5	262.8	352.8
Secondary:					
1940	.....	.....	14.6	.....	.....
1941	.....	.....	5.4	.....	.....
1942	.....	.....	.....	.....	.....
1943	.....	.....	.....	.....	.....
1944	.....	.....	34.9	5.1	17.9
1945	.....	.....	0.7	2.6	.....
1946	.....	.....	34.6	.....	.....
Totals	.....	.....	90.2	7.7	17.9

Table No. 4

MILEAGES OF STATE HIGHWAYS MAINTAINED BY THE STATE HIGHWAY COMMISSION

Highway System and Year	Concrete Pavement	Bituminous Pavement	Bituminous Macadam	Oiled Rock Surfacing	Unoiled Rock Surfacing	Graded and Unimproved Earth	Total
Primary:							
1938	309	563	1,080	1,890	559	219	4,620
1939	307	561	1,103	2,084	450	175	4,680
1940	322	530	1,116	2,244	374	131	4,717
1941	325	527	1,122	2,367	330	89	4,760
1942	336	533	1,208	2,313	282	109	4,781
1943	338	524	1,218	2,329	242	139	4,790
1944	337	529	1,223	2,324	244	143	4,800
1945	338	528	1,223	2,324	244	150	4,807
Secondary:							
1938	51	127	38	491	1,017	484	2,208
1939	51	128	63	613	982	389	2,226
1940	46	134	41	727	915	445	2,308
1941	54	133	48	939	794	381	2,349
1942	45	140	51	993	757	375	2,361
1943	50	140	52	993	696	419	2,350
1944	45	141	51	1,048	681	384	2,350
1945	46	141	51	1,060	669	396	2,363

See previous reports for details covering years prior to 1938.

Table No. 5

STATE FUNDS RECEIVED AND EXPENDED BY THE STATE HIGHWAY COMMISSION

From 1917 to June 30, 1946

Year	Net Receipts (State Funds Only)	Net Expenditures (State Funds Only)
1917 (including $94,418.14 balance from 1916)	$ 1,802,190.22	$ 674,249.61
1918	1,759,600.15	2,214,007.87
1919	7,458,614.05	6,248,304.16
1920	11,320,354.05	11,381,606.97
1921	13,550,136.40	15,000,824.65
1922	9,608,966.45	7,724,688.96
1923	7,664,977.79	7,287,991.77
1924	6,115,536.48	6,916,867.91
1925	10,231,908.30	10,611,283.45
1926	7,345,080.19	7,927,130.75
1927	8,627,279.00	8,474,609.91
1928	8,721,396.09	8,975,204.79
1929	10,658,473.58	10,160,542.57
1930	13,897,663.65	12,808,014.45
1931	10,930,545.38	11,108,835.57
1932	9,925,665.72	10,812,369.81
1933	7,804,925.99	7,860,497.50
1934	8,798,396.81	7,517,063.41
1935	14,469,922.86	13,687,022.82
1936	10,943,742.46	13,194,698.50
1937	11,996,069.07	12,595,127.42
1938	11,418,916.44	11,261,453.70
1939	11,821,364.62	*11,158,189.25
1940	12,759,332.27	*12,156,575.57
1941	15,093,637.57	14,874,800.01
1942	13,450,738.45	13,290,781.61
1943	11,888,155.10	9,128,388.61
1944	11,714,984.39	8,499,431.13
1945	13,224,169.64	7,635,689.97
1946 (to June 30)	8,770,375.44	6,307,303.00
Totals	$303,773,118.61	$287,493,555.70
Balance on hand July 1, 1946		*16,279,562.91
Totals		$303,773,118.61

* Includes $350,000 in pay roll revolving fund.

Table No. 6

YEARLY EXPENDITURES ON WORK HANDLED UNDER THE SUPERVISION OF THE STATE HIGHWAY COMMISSION

From 1917 to June 30, 1946

Year	State Funds	County Funds	Government Funds	Miscellaneous Contributor's Funds	Totals
1917	$ 674,249.61	$ 270,162.37	$	$	$ 944,411.98
1918	2,214,007.87	439,562.42			2,653,570.29
1919	6,248,304.16	368,550.01	224,851.60		6,841,705.77
1920	11,381,606.97	866,836.96	1,096,027.33	19,364.26	13,363,835.51
1921	15,000,824.65	984,296.42	2,181,956.65	47,913.16	18,214,990.88
1922	7,724,688.96	3,727,388.65	1,043,695.07	120,354.97	12,616,127.65
1923	7,287,991.77	2,180,266.25	1,719,088.71	149,075.88	11,336,422.61
1924	6,916,867.91	1,544,267.37	1,118,777.53	136,150.73	9,716,063.54
1925	10,611,283.45	1,297,105.54	1,327,328.92	92,638.46	13,328,356.37
1926	7,927,130.75	704,856.67	1,264,688.74	89,761.29	9,986,437.45
1927	8,474,609.91	611,924.22	1,111,521.64	65,387.07	10,263,442.85
1928	8,975,204.79	683,283.51	582,440.20	27,315.83	10,268,244.33
1929	10,160,542.57	532,907.15	624,415.28	9,969.29	11,327,834.29
1930	12,808,014.45	280,079.24	1,565,288.34	14,554.57	14,667,936.60
1931	11,108,835.57	236,863.93	4,535,069.46	19,947.46	15,900,716.42
1932	10,812,369.81	165,238.34	1,703,369.15	63,513.25	12,744,490.55
1933	7,860,497.50	168,028.79	2,723,724.39	26,912.05	10,779,162.73
1934	7,517,063.41	174,720.24	6,023,993.01	3,522.50	13,719,299.16
1935	13,687,022.82	133,562.57	4,165,503.33	10,000.00	17,996,088.72
1936	13,194,698.50	129,233.41	6,375,343.26	8,773.61	19,708,048.78
1937	12,595,127.42	80,174.48	4,589,894.89	62,146.90	17,327,343.69
1938	11,261,453.70	186,284.48	2,873,801.64	25,000.00	14,346,539.82
1939	11,158,189.25	9,480.34	2,652,475.77	12,202.46	13,832,347.82
1940	12,156,575.57	4,000.00	2,926,250.31	30,976.06	15,117,801.94
1941	14,874,800.01	62,041.05	2,810,894.93	7,250.00	17,754,985.99
1942	13,290,781.61	8,492.08	2,273,616.82	13,926.38	15,586,816.89
1943	9,128,388.61	1,550.00	4,341,584.26	32,500.00	13,504,022.87
1944	8,499,431.13	8,550.00	3,108,858.22	30,112.71	11,646,952.06
1945	7,635,689.97	1,550.00	2,290,000.27	861.01	9,928,101.25
1946 (to June 30)	6,307,303.00		290,512.11	385.08	6,598,200.19
Totals	$287,493,555.70	$15,861,256.49	$67,544,971.83	$1,120,514.98	$372,020,299.00

Table No. 7

SUMMARY OF EXPENDITURES BY MAJOR ITEMS

From 1917 to June 30, 1946

Classification of Expenditures	Total Amount Expended	Cooperation in Expenditures			
		State	County	Government	Miscellaneous Contributors
CAPITAL OUTLAYS					
Contract construction	$173,634,692.81	$ 90,506,855.89	$ 15,230,887.69	$ 66,778,328.81	$ 1,118,620.42
Cooperation in forest road work	6,168,679.46	5,674,329.09	494,350.37	.....	.....
Minor betterments	7,427,164.02	7,417,891.28	5,272.74	4,000.00	.....
Surveys	5,280,970.11	5,231,647.60	15,672.21	33,650.30	.....
Sub-totals, construction	$192,511,506.40	$108,830,723.86	$ 15,746,183.01	$ 66,815,979.11	$ 1,118,620.42
Rights of way, quarries, etc.	7,298,254.15	7,276,988.14	9,909.75	11,356.26	.....
Parks	1,048,785.64	1,033,806.64	.....	14,979.00	.....
Buildings and improvements (except parks)	1,075,484.05	1,043,024.45	.....	32,459.60	.....
Equipment (subsequent to 1934 only)	419,825.88	419,825.88	.....	.....	.....
Sub-totals, capital outlays (including construction)	$202,353,856.12	$118,604,368.97	$ 15,756,092.76	$ 66,874,773.97	$ 1,118,620.42
MAINTENANCE					
Special maintenance	$ 9,380,803.15	$ 9,202,126.84	$ 2,516.17	$ 176,047.45	$ 112.69
General maintenance	61,278,686.70	61,179,082.37	84,204.52	13,617.94	1,781.87
Other maintenance items	3,184,936.77	3,177,555.09	1,643.53	5,738.15	.....
Sub-totals, maintenance	$ 73,844,426.62	$ 73,558,764.30	$ 88,364.22	$ 195,403.54	$ 1,894.56
MISCELLANEOUS					
Administration	$ 8,328,146.19	$ 8,328,146.19	$	$	$ .....
Miscellaneous operations	6,744,192.52	6,252,598.69	16,799.51	474,794.32	.....
Bond interest and maturities	80,749,677.55	80,749,677.55	.....	.....	.....
Sub-totals, miscellaneous	$ 95,822,016.26	$ 95,330,422.43	$ 16,799.51	$ 474,794.32	$ .....
Totals	$372,020,299.00	$287,493,555.70	$ 15,861,256.49	$ 67,544,971.83	$ 1,120,514.98

For a summary of expenditures in detail see Table No. 10.

Table No. 8—SUMMARY OF EXPENDITURES FROM 1917 TO JUNE 30, 1946

Classification of Expenditures	Total Amount Expended	Cooperation in Expenditures			
		State	County	Government	Miscellaneous Contributors
Construction, primary highways	$154,060,576.56	$ 80,978,676.48	$ 14,465,273.34	$ 57,548,468.07	$ 1,068,158.67
Construction, secondary highways	13,453,282.41	7,066,463.35	424,232.57	5,961,931.15	655.34
Construction, county roads	6,120,833.84	2,461,716.06	341,381.78	3,267,929.59	49,806.41
Cooperation in forest road work	6,168,679.46	5,674,329.09	494,350.37		
Minor betterments	7,427,164.02	7,417,891.28	5,272.74	4,000.00	
Surveys and engineering, county work	5,280,970.11	5,231,647.60	15,672.21	33,650.30	
Real property negotiation expense	509,186.29	509,186.29			
Purchase of rights of way, quarries, etc.	6,789,067.86	6,767,801.85	9,909.75	11,356.26	
Purchase of parks	767,518.44	767,518.44			
Improvements in parks	281,267.20	266,288.20		14,979.00	
Improvements at maintenance stations	651,492.05	619,032.45		32,459.60	
Improvements of other properties	423,992.00	423,992.00			
Equipment purchases, sales and depreciation	419,825.88	419,825.88			
Sub-totals, capital outlays	$202,353,856.12	$118,604,368.97	$ 15,756,092.76	$ 66,874,773.97	$ 1,118,620.42
Special maintenance, primary	8,583,560.04	8,420,858.52	528.87	162,059.96	112.69
Special maintenance, secondary	787,898.24	771,990.92	1,987.30	13,920.02	
Special maintenance, county roads	9,344.87	9,277.40		67.47	
General maintenance, primary	51,346,941.37	51,247,768.15	83,773.41	13,617.94	1,781.87
General maintenance, secondary	9,931,745.33	9,931,314.22	431.11		
Maintenance of county roads, signs, etc.	571,793.79	567,837.24	1,643.53	2,313.02	
Maintenance of city streets	329,035.19	325,610.06		3,425.13	
District maintenance superintendence	2,284,107.79	2,284,107.79			
Sub-totals, maintenance	$ 73,844,426.62	$ 73,558,764.30	$ 88,364.22	$ 195,403.54	$ 1,894.56
Administration and general supervision	8,328,146.19	8,328,146.19			
Planning and traffic surveys	1,169,290.88	719,768.56		449,522.32	
Travel information bureau	791,848.96	791,848.96			
Radio communication system	166,692.29	141,420.29		25,272.00	
Operation of parks	430,932.54	430,932.54			
Operation of maintenance stations, R/W, etc.	273,853.82	273,853.82			
Operation of drawbridges and ferries	1,402,382.83	1,385,583.32	16,799.51		
Truck load inspection	348,844.20	348,844.20			
Miscellaneous	2,142,948.47	2,142,948.47			
Sub-totals, operation	$ 15,054,940.18	$ 14,563,346.35	$ 16,799.51	$ 474,794.32	$
Service and clearing accounts	17,398.53	17,398.53			
Bond interest and maturities	80,749,677.55	80,749,677.55			
Totals	$372,020,299.00	$287,493,555.70	$ 15,861,256.49	$ 67,544,971.83	$ 1,120,514.98

Table No. 9

SCHEDULE OF YEARLY INCOMES FROM DIFFERENT SOURCES

From 1917 to June 30, 1946

Source of Income	1917 to 1939 Inclusive	1940	1941	1942	1943
Balance on hand December 1, 1916	$ 94,418.14	$	$	$	$
Bond sales (including accrued interest)	54,577,920.04				
Motor vehicle license fees	65,736,227.90	2,900,537.53	3,629,074.04	3,224,862.56	3,234,580.79
Gasoline tax	103,096,727.66	11,301,492.45	12,867,932.37	11,816,457.22	9,648,354.61
Diesel fuel tax					65,082.40
Motor transportation fees	5,806,954.21	1,104,338.56	1,297,786.27	1,516,892.51	1,735,854.20
One-quarter mill property tax	1,724,032.33				
Receipts on rentals, discounts, etc.	544,748.59	9,573.78	9,758.70	4,796.42	2,907.87
Fines for traffic law violations	360,009.78	30,291.64	41,145.05	47,054.10	54,689.68
Transfer to increase pay roll revolving fund	125,000.00				150,000.00
Sub-totals, state funds (gross)	$232,066,038.65	$ 15,346,233.96	$ 17,845,696.43	$ 16,610,062.81	$ 14,891,469.55
Less contributions to state police	2,290,973.88	352,225.00	341,097.47	344,252.46	390,898.76
Less contributions to counties	12,590,235.65	2,234,676.69	2,410,961.39	2,815,071.90	2,612,415.69
Less contributions to state general fund	313,103.37				
Sub-totals, state funds (net)	$216,871,725.75	$ 12,759,332.27	$ 15,093,637.57	$ 13,450,738.45	$ 11,888,155.10
County cooperation	15,775,073.36	4,000.00	62,041.05	8,492.08	1,550.00
Federal Government cooperation	49,503,254.91	2,926,250.31	2,810,894.93	2,273,616.82	4,341,584.26
Miscellaneous cooperation	1,004,503.74	30,976.06	7,250.00	13,926.38	32,500.00
Totals	$283,154,557.76	$ 15,720,558.64	$ 17,973,823.55	$ 15,746,773.73	$ 16,263,789.36

Table No. 9—Continued

SCHEDULE OF YEARLY INCOMES FROM DIFFERENT SOURCES

From 1917 to June 30, 1946

Source of Income	1917 to 1943 Inclusive	1944	1945	1946 (To June 30)	1917 to June 30, 1946
Balance on hand December 1, 1916	$ 94,418.14	$	$	$	$ 94,418.14
Bond sales (including accrued interest)	54,577,920.04				54,577,920.04
Motor vehicle license fees	78,725,282.82	3,300,038.92	3,416,141.33	2,831,917.09	88,273,380.16
Gasoline tax	148,730,964.31	9,637,960.11	11,033,246.54	6,318,165.24	175,720,336.20
Diesel fuel tax	65,082.40	224,890.71	230,292.05	125,169.72	645,434.88
Motor transportation fees	11,461,825.75	1,897,873.44	1,962,430.84	966,265.57	16,288,395.60
One-quarter mill property tax	1,724,032.33				1,724,032.33
Fines for traffic law violations	533,190.25	79,346.67	92,046.77	53,122.34	757,706.03
Astoria-Megler ferry receipts				16,637.30	16,637.30
Receipts on rentals, discounts, etc.	571,785.36	3,274.01	4,333.64	7,648.69	587,041.70
Transfers to increase pay roll revolving fund	275,000.00				275,000.00
Sub-totals, state funds (gross)	$296,759,501.40	$ 15,143,383.86	$ 16,738,491.17	$ 10,318,925.95	$338,960,302.38
Less contributions to state police	3,719,447.57	380,662.52	428,111.75	122,983.21	4,651,205.05
Less contributions to counties	22,663,361.32	2,311,568.60	2,340,748.48	598,427.65	27,914,106.05
Less contributions to cities		736,168.35	745,461.30	827,524.73	2,309,154.38
Less contributions to state general fund	313,103.37				313,103.37
Sub-totals, state funds (net)	$270,063,589.14	$ 11,714,984.39	$ 13,224,169.64	$ 8,769,990.36	$303,772,733.53
County cooperation	15,851,156.49	8,550.00	1,550.00		15,861,256.49
Federal Government cooperation	61,855,601.23	3,108,858.22	2,290,000.27	290,512.11	67,544,971.83
Miscellaneous cooperation	1,089,156.18	30,112.71	861.01	385.08	1,120,514.98
Totals	$348,859,503.04	$ 14,862,505.32	$ 15,516,580.92	$ 9,060,887.55	$388,299,476.83

Table No. 10

SCHEDULE OF YEARLY EXPENDITURES

From 1917 to June 30, 1946

The expenditures in this table include all expenditures in connection with work handled under the direct supervision of the State Highway Commission during the period December 1, 1916, to June 30, 1946

Classification of Expenditures	1917 to 1939 Inclusive	1940	1941	1942	1943
Construction, primary	$132,599,923.51	$ 5,557,962.24	$ 5,862,507.92	$ 4,934,468.74	$ 3,474,895.30
Construction, secondary	7,010,599.04	575,782.58	1,344,747.54	694,694.46	301,710.66
Construction, county roads	2,739,918.00	370,953.32	414,835.15	675,924.78	769,501.70
Cooperation in forest road work	5,820,003.86	.....	285,500.00	.....	.....
Minor betterments, primary	5,635,736.05	234,909.58	254,144.40	95,892.70	79,185.18
Minor betterments, secondary	537,182.46	99,977.16	126,166.84	33,330.40	23,324.05
Minor betterments, county roads	.....	.....	.....	.....	.....
Surveys and engineering, county work	3,521,086.55	261,635.91	307,343.05	206,815.35	221,000.20
Sub-totals, construction	$157,864,449.47	$ 7,101,220.79	$ 8,595,244.90	$ 6,641,126.43	$ 4,869,617.09
Real property negotiation expense	258,002.81	29,222.37	35,771.29	38,605.36	37,813.08
Purchase of rights of way, quarries, etc.	3,474,058.92	414,128.94	1,140,986.03	771,820.74	307,866.09
Purchase of parks	450,998.17	72,201.01	104,419.29	26,045.43	25,322.58
Improvements in parks	181,136.43	27,508.37	25,364.97	13,445.35	430.48
Improvements at maintenance stations	325,652.93	129,927.26	67,021.65	43,871.87	5,602.44
Improvements of other properties	203,220.11	28,651.75	143,313.66	24,312.45	16,676.36
Equipment purchases, sales and depreciation	314,268.56	181,755.40	184,240.82	Cr. 60,509.06	Cr. 197,156.68
Sub-totals, capital outlays (including construction)	$163,071,787.40	$ 7,984,615.89	$ 10,296,362.61	$ 7,498,718.57	$ 5,066,171.44

Special maintenance, primary	5,859,613.47	314,288.28	372,443.76	377,570.64	755,582.80
Special maintenance, secondary	117,446.99	42,139.76	57,671.94	90,211.95	81,512.61
Special maintenance, county roads	.....	.....	.....	.....	.....
General maintenance, primary	33,466,951.85	2,439,501.08	2,740,332.38	2,793,164.40	2,866,898.50
General maintenance, secondary	3,609,167.27	687,794.03	760,360.41	890,095.56	877,369.77
Maintenance of county roads, signs, etc.	40,115.10	12,606.66	10,236.40	63,525.90	41,556.24
Maintenance of city streets	.....	.....	6,178.67	161,735.99	141,962.85
District maintenance superintendence	1,464,063.77	110,827.42	106,300.99	114,027.41	131,623.75
Sub-totals, maintenance	$ 44,557,358.45	$ 3,607,157.23	$ 4,053,524.55	$ 4,490,331.85	$ 4,896,506.52
Administration and general supervision	5,287,355.86	461,151.50	468,523.49	455,540.22	431,597.93
Planning and traffic surveys	706,414.87	75,196.75	89,747.39	75,263.94	52,307.64
Travel information bureau	416,680.81	109,682.21	101,253.18	36,855.18	12,508.03
Radio communication system	104,099.29	9,793.29	7,393.06	8,866.28	9,429.19
Operation of parks	155,936.45	38,791.26	48,258.18	38,186.59	33,360.48
Operation of maintenance stations, R/W, etc.	205,589.38	35,298.00	39,768.35	33,630.36	25,875.55
Operation of drawbridges and ferries	965,147.75	49,330.90	50,725.59	62,447.25	66,454.55
Truck load inspection	8,045.45	7,052.02	21,425.11	47,375.28	57,162.58
Miscellaneous	1,205,053.87	48,938.96	68,822.03	220,618.92	361,884.60
Sub-totals, operation	$ 9,054,323.73	$ 835,234.89	$ 895,916.38	$ 978,784.02	$ 1,050,580.55
Service and clearing accounts	Cr. 375,914.87	Cr. 67,930.26	Cr. 229,902.95	192.09	19,944.80
Bond interest and maturities	65,575,863.10	2,758,724.19	2,739,085.40	2,618,790.36	2,470,819.56
Totals	$281,883,417.81	$ 15,117,801.94	$ 17,754,985.99	$ 15,586,816.89	$ 13,504,022.87

Table No. 10—Continued

SCHEDULE OF YEARLY EXPENDITURES

From 1917 to June 30, 1946

Classification of Expenditures	1944	1945	1946 (To June 30)	Reclassification Transfers	1917 to June 30, 1946
Construction, primary	$ 1,106,930.02	$ 1,290,274.79	$ 1,454,686.62	Cr.$2,221,072.58	$154,060,576.56
Construction, secondary	1,384,558.63	353,719.73	375,921.48	1,411,548.29	13,453,282.41
Construction, county roads	211,034.61	176,341.89	19,079.58	743,244.81	6,120,833.84
Cooperation in forest road work	Cr. 36,824.40	.....	100,000.00	.....	6,168,679.46
Minor betterments, primary	45,277.62	103,382.11	53,381.18	Cr. 176,179.35	6,325,729.47
Minor betterments, secondary	10,782.93	47,183.18	47,249.18	88,895.71	1,014,091.91
Minor betterments, county roads	.....	.....	.....	87,342.64	87,342.64
Surveys and engineering, county work	292,879.50	295,024.95	175,184.60	.....	5,280,970.11
Sub-totals, construction	$ 3,014,638.91	$ 2,265,926.65	$ 2,225,502.64	Cr.$ 66,220.48	$192,511,506.40
Real property negotiation expense	38,184.75	46,255.52	25,331.11	.....	509,186.29
Purchase of rights of way, quarries, etc.	222,057.99	237,519.87	220,629.28	.....	6,789,067.86
Purchase of parks	64,603.15	8,406.56	15,522.25	.....	767,518.44
Improvements in parks	24.00	5,260.29	6,495.91	21,601.40	281,267.20
Improvements at maintenance stations	4,708.01	13,527.28	20,226.48	40,954.13	651,492.05
Improvements of other properties	13,245.03	Cr. 10,075.79	4,648.43	.....	423,992.00
Equipment purchases, sales and depreciation	Cr. 81,663.65	Cr. 94,129.76	173,020.25	.....	419,825.88
Sub-totals, capital outlays (including construction)	$ 3,275,798.19	$ 2,472,690.62	$ 2,691,376.35	Cr.$ 3,664.95	$202,353,856.12

Special maintenance, primary	1,019,511.05	66,730.75	27,719.79 Cr.	209,900.50	8,583,560.04
Special maintenance, secondary	182,574.81	4,434.86	11,349.69	200,555.63	787,898.24
Special maintenance, county roads	.....	.....	.....	9,344.87	9,344.87
General maintenance, primary	2,932,783.53	3,370,696.15	1,802,977.20 Cr.	1,094,955.62	51,346,941.37
General maintenance, secondary	880,898.08	974,574.54	583,682.64	641,022.54	9,931,745.33
Maintenance of county roads, signs, etc.	27,117.72	25.01	3,909.07	427,874.08	571,793.79
Maintenance of city streets	16,772.21	150.15	2,235.32	.....	329,035.19
District maintenance superintendence	125,628.22	128,261.87	77,374.36	26,000.00	2 284,107.79
Sub-totals, maintenance	$ 5,185,285.62	$ 4,544,873.33	$ 2,509,448.07 Cr.	$ 59.00	$ 73,844,426.62
Administration and general supervision	433,689.86	480,455.03	306,108.35	3,723.95	8,328,146.19
Planning and traffic surveys	53,426.77	59,989.65	56,943.87	.....	1,169,290.88
Travel information bureau	21,616.54	57,031.53	36,221.48	.....	791,848.96
Radio communication system	10,203.95	11,220.32	5,686 91	.....	166,692.29
Operation of parks	41,208.93	41,183.18	34,007.47	.....	430,932.54
Operation of maintenance stations, R/W, etc.	14,536.08	Cr. 107,235.94	26,392.04	.....	273,853.82
Operation of drawbridges and ferries	78,445.35	88,510.64	41,320.80	.....	1,402,382.83
Truck load inspection	71,198.69	85,039.59	51,545.48	.....	348,844.20
Miscellaneous	71,157.18	137,806.26	28,666.65	.....	2,142,948.47
Sub-totals, operation	$ 795,483.35	$ 854,000.26	$ 586,893.05	$ 3,723.95	$ 15,054,940.18
Service and clearing accounts	165,216.11	374,797.14	130,996.47	.....	17,398.53
Bond interest and maturities	2,225,168.79	1,681,739.90	679,486.25	.....	80,749,677.55
Totals	$ 11,646,952.06	$ 9,928,101.25	$ 6,598,200.19	$	$372,020,299.00

Table No. 11

EXPENDITURES FOR PRIMARY HIGHWAY CONSTRUCTION WORK SUMMARIZED BY HIGHWAYS

From 1917 to June 30, 1946

This table gives the totals of the expenditures made for construction work upon each of the several primary state highways during the 30-year period ending June 30, 1946. It includes expenditures for construction, minor betterments, surveys, engineering of county construction and state expenditures in connection with forest highway work.

Hwy. No.	Highway	Total Amount Expended	Cooperation in Expenditures			
			By State	By County	By Federal Government	By Miscel. Contributors
1	Pacific, Jct. City-South	$ 18,154,761.04	$ 12,356,838.50	$ 478,720.75	$ 5,185,565.96	$ 133,635.83
1E	Pacific, East	11,424,064.91	4,920,527.01	303,766.64	6,063,341.51	136,429.75
1W	Pacific, West	9,608,580.60	4,680,758.58	378,003.88	4,529,739.64	20,078.50
2	Columbia River	17,341,970.46	11,849,811.45	234,159.44	5,110,532.06	147,467.51
3	Oswego	947,570.39	627,660.57	168,309.82	114,100.00	37,500.00
4	The Dalles-California	6,729,800.00	2,791,101.48	1,032,498.39	2,841,430.81	64,769.32
5	John Day	5,946,264.73	3,025,333.54	599,304.42	2,319,626.77	2,000.00
6	Old Oregon Trail	9,710,579.27	4,745,570.71	711,432.92	4,016,743.89	236,831.75
7	Central Oregon	4,144,896.61	2,343,259.73	154,287.80	1,647,349.08	
8	Oregon-Washington	1,541,101.59	1,197,839.22	122,649.31	220,613.06	
9	Oregon Coast	25,724,348.02	15,316,837.13	2,044,814.63	8,316,331.75	46,364.51
10	Wallowa Lake	2,481,446.98	1,280,617.02	542,380.21	653,369.75	5,080.00
11	Enterprise-Lewiston	386,274.45	314,652.96	71,621.49		
12	Baker-Homestead	986,707.06	458,640.30	377,811.17	95,477.41	54,778.18
13	Baker-Unity	800,207.20	457,694.21	331,113.14	11,399.85	
14	Crooked River	451,698.06	353,197.08	98,500.98		
15	McKenzie	2,060,020.05	998,876.48	427,755.02	618,179.76	15,208.79
16	Santiam	2,547,810.46	1,485,611.98	232,885.28	789,648.96	39,664.24
17	McKenzie-Bend	90,954.40	85,445.20	5,509.20		
18	Willamette	2,115,244.73	900,100.30	311,897.95	903,246.48	
19	Fremont	1,935,154.09	858,176.24	190,273.36	886,704.49	
20	Klamath Falls-Lakeview	2,432,289.82	1,772,604.17	265,269.22	390,639.65	3,776.78
21	Green Springs	2,095,241.48	1,072,062.06	557,877.85	438,529.42	26,772.15
22	Crater Lake	2,405,856.06	1,347,462.15	177,121.60	881,272.31	
23	Dairy-Bonanza	122,027.26	87,163.46	34,863.80		
24	Burns-Crane	404,368.66	200,206.45	48,156.79	156,005.42	
25	Redwood	962,932.69	631,294.92	54,507.82	277,129.95	
26	Mt. Hood	2,398,944.36	1,678,884.65	505,287.08	214,772.63	
27	Alsea	1,390,800.32	1,061,698.36	278,757.08	50,344.88	
28	Pendleton-John Day	1,831,704.82	910,844.63	162,236.66	758,371.10	252.43
29	Tualatin Valley	2,211,706.96	1,566,001.01	177,813.38	455,193.64	12,698.93
30	Salem-Dallas	992,591.59	467,933.46	295,472.12	229,186.01	

Table No. 11—Continued

Hwy. No.	Highway	Total Amount Expended	Cooperation in Expenditures			
			By State	By County	By Federal Government	By Miscel. Contributors
31	Albany-Corvallis	$ 583,305.97	$ 116,527.54	$ 130,101.15	$ 299,593.00	$ 37,084.28
32	Three Rivers	597,203.20	516,912.77	21,646.19	58,644.24	
33	Corvallis-Newport	1,755,914.66	1,193,513.70	272,829.35	280,951.35	8,620.26
34	Siuslaw	1,693,906.62	1,174,252.66	476,293.56	43,360.40	
35	Coos Bay-Roseburg	1,936,284.89	1,027,671.48	649,440.43	243,072.98	16,100.00
36	Pendleton-Cold Springs	440,281.39	168,808.13	191,239.44	80,233.82	
37	Wilson River	1,786,986.58	1,231,247.29		555,739.29	
38	Oregon Caves	474,813.41	460,813.41	14,000.00		
39	Salmon River	1,429,724.27	1,105,094.60	58,106.99	266,522.68	
40	Beaverton-Hillsdale	276,473.17	139,220.20	61,252.97	76,000.00	
41	Ochoco	2,268,954.13	1,281,960.66	173,593.13	810,900.34	2,500.00
42	Sherman	1,395,928.11	446,978.47	360,879.73	586,322.12	1,747.79
43	Monmouth-Independence	69,324.41	69,324.41			
44	Wapinitia	779,429.84	487,929.82		291,500.02	
45	Umpqua	1,664,410.85	309,459.30	366,174.97	988,776.58	
46	Necanicum	651,838.80	342,980.19	148,986.77	159,871.84	
47	Sunset	4,273,967.53	2,343,074.14	92,000.00	1,838,893.29	
48	John Day-Burns	169,402.88	169,402.88			
49	Lakeview-Burns	589,745.77	341,701.06	31,604.06	216,440.65	
50	Klamath Falls-Malin	767,154.83	494,700.48	77,816.14	177,600.37	17,037.84
51	West Portland-Hubbard	457,169.62	134,159.09		323,010.53	
52	Heppner	1,253,749.35	936,923.17	315,066.35		1,759.83
53	Warm Springs	810,625.38	262,866.38		547,759.00	
54	Boardman-Stanfield	586,334.73	184,566.85		401,767.88	
55	Halfway	248,875.90	87,838.47	122,798.01	38,239.42	
	Flight Strips	1,130,218.35	24,689.72		1,105,528.63	
	Undistributed, Co. General	73,289.84	37,680.98	35,608.86		
	Undistributed, Entire St.	5,607.61	5,607.61			
	Totals	$170,548,841.21	$ 96,940,610.47	$14,974,497.30	$57,565,574.77	$ 1,068,158.67
	Primary maintenance	61,845,325.15	61,583,450.41	84,302.28	175,677.90	1,894.56
	Secondary construction	15,284,407.81	8,885,805.38	426,015.94	5,971,931.15	655.34
	Secondary maintenance	11,028,716.29	11,012,377.86	2,418.41	13,920.02	
	County road construction	6,678,257.38	3,004,308.01	345,669.77	3,278,473.19	49,806.41
	County road maintenance	970,385.18	962,936.03	1,643.53	5,805.62	
	General purposes	105,664,365.98	105,104,067.54	26,709.26	533,589.18	
	Grand totals	$372,020,299.00	$287,493,555.70	$15,861,256.49	$67,544,971.83	$ 1,120,514.98

Table No. 12

EXPENDITURES FOR PRIMARY HIGHWAY MAINTENANCE WORK SUMMARIZED BY HIGHWAYS

From 1917 to June 30, 1946

Kinds of expenditures are same as included in Table No. 14

Hwy. No.	Highway	Total Amount Expended	Cooperation in Expenditures			
			By State	By County	By Federal Government	By Miscel. Contributors
1	Pacific, Junction City-South	$ 2,040,961.23	$ 3,029,315.53	$ 11,645.70	$	$
1E	Pacific, East	1,935,320.01	1,932,818.59	2,501.42		
1W	Pacific, West	1,225,929.16	1,219,731.23	6,197.93		
2	Columbia River	4,963,836.00	4,949,514.24	12,556.40	870.80	894.56
3	Oswego	161,228.35	161,228.35			
4	The Dalles-California	4,239,275.74	4,225,444.46	769.57	13,061.71	
5	John Day	2,663,541.50	2,658,483.51	5,057.99		
6	Old Oregon Trail	5,000,197.94	4,956,457.58	1,228.14	42,512.22	
7	Central Oregon	1,472,834.03	1,469,118.25	15.45	3,700.33	
8	Oregon-Washington	516,918.03	511,566.57	5,351.46		
9	Oregon Coast	6,717,218.59	6,672,607.61	4,501.67	39,109.31	1,000.00
10	Wallowa Lake	1,456,914.27	1,456,914.27			
11	Enterprise-Lewiston	193,266.13	193,266.13			
12	Baker-Homestead	387,850.61	387,654.45	196.16		
13	Baker-Unity	351,940.81	351,940.81			
14	Crooked River	113,271.13	113,271.13			
15	McKenzie	1,347,593.59	1,336,294.08		11,299.51	
16	Santiam	1,210,548.31	1,203,004.15		7,544.16	
17	McKenzie-Bend	224,648.49	220,992.59		3,655.90	
18	Willamette	875,765.82	875,765.82			
19	Fremont	859,980.56	846,888.73		13,091.83	
20	Klamath Falls-Lakeview	1,010,446.99	1,008,797.57		1,649.42	
21	Green Springs	1,137,823.07	1,137,622.30	200.77		
22	Crater Lake	1,108,080.46	1,107,737.79		342.67	
23	Dairy-Bonanza	66,347.14	66,347.14			
24	Burns-Crane	137,861.22	137,764.75	96.47		
25	Redwood	451,350.93	451,350.93			
26	Mt. Hood	1,619,069.75	1,612,949.07		6,120.68	
27	Alsea	833,404.74	833,404.74			
28	Pendleton-John Day	1,132,825.32	1,132,825.32			
29	Tualatin Valley	436,806.21	426,813.00	9,993.21		
30	Salem-Dallas	333,741.04	333,688.09	52.95		
31	Albany-Corvallis	92,389.60	91,539.66	800.00		
32	Three Rivers	919,658.83	902,721.38	16,937.45		
33	Corvallis-Newport	1,259,262.89	1,256,672.10	320.50	2,270.29	
34	Siuslaw	811,772.22	800,279.91		11,492.31	
35	Coos Bay-Roseburg	1,862,425.89	1,851,529.61	3,838.17	7,058.11	
36	Pendleton-Cold Springs	169,675.86	169,675.86			
37	Wilson River	624,410.51	624,410.51			
38	Oregon Caves	114,267.57	114,267.57			
39	Salmon River	814,719.55	814,418.63	300.92		
40	Beaverton-Hillsdale	64,102.89	62,362.94	1,739.95		
41	Ochoco	1,122,712.29	1,122,712.29			
42	Sherman	739,085.83	731,778.67		7,307.16	
43	Monmouth-Independence	33,993.24	33,993.24			
44	Wapinitia	512,129.12	512,129.12			
45	Umpqua	453,973.12	453,973.12			
46	Necanicum	493,455.29	493,455.29			
47	Sunset	695,031.89	695,031.89			
48	John Day-Burns	313,438.00	313,438.00			
49	Lakeview-Burns	281,636.27	281,636.27			
50	Klamath Falls-Malin	388,650.49	388,650.49			
51	West Portland-Hubbard	6,269.52	6,269.52			
52	Heppner	632,733.57	628,142.08		4,591.49	
53	Warm Springs	47,919.77	47,919.77			
54	Boardman-Stanfield	17,726.25	17,726.25			
55	Halfway	58,778.15	58,778.15			
	Undistributable to highways	144,943.67	144,943.67			
	Maintenance supervision	1,943,415.64	1,943,415.64			
	Totals	$61,845,325.15	$61,583,450.41	$ 84,302.28	$175,677.90	$ 1,894.56

Table No. 13

EXPENDITURES FOR PRIMARY HIGHWAY CONSTRUCTION WORK SUMMARIZED BY COUNTIES

From 1917 to June 30, 1946

Kinds of expenditures are same as included in Table No. 11

County	Total Amount Expended	Cooperation in Expenditures			
		By State	By County	By Federal Government	By Miscel. Contributors
Baker	$ 5,559,589.61	$ 2,722,657.14	$ 1,007,557.69	$ 1,740,387.99	$ 88,986.79
Benton	3,279,274.50	2,104,219.66	372,439.94	793,994.64	8,620.26
Clackamas	5,453,331.48	2,855,722.50	482,535.78	1,975,066.14	140,007.06
Clatsop	8,180,767.80	4,299,718.90	448,340.54	3,432,708.36	----
Columbia	2,850,198.71	2,355,310.26	12,060.23	481,125.59	1,702.63
Coos	6,542,243.25	4,007,833.93	821,548.46	1,687,186.59	25,674.27
Crook	1,386,909.30	885,411.27	198,071.21	300,926.82	2,500.00
Curry	4,806,221.65	3,241,609.31	227,542.72	1,337,069.62	----
Deschutes	2,570,826.41	1,329,422.31	152,817.14	1,068,633.50	19,953.46
Douglas	11,805,287.17	7,603,176.47	1,213,134.95	2,954,507.23	34,468.52
Gilliam	2,644,160.89	1,571,374.55	266,278.07	804,508.27	2,000.00
Grant	3,755,468.43	1,917,253.96	188,600.65	1,649,613.82	----
Harney	2,643,959.96	1,192,331.33	128,701.27	1,322,927.36	----
Hood River	2,892,276.58	2,446,077.64	283,001.46	128,735.96	34,461.52
Jackson	7,698,278.87	4,261,514.57	523,074.48	2,870,267.64	43,422.18
Jefferson	1,504,867.89	775,660.14	138,482.18	589,985.57	740.00
Josephine	4,788,349.79	3,405,360.06	110,077.78	1,273,411.95	----
Klamath	6,891,851.75	3,471,261.72	696,293.23	2,652,546.69	71,750.11
Lake	2,959,398.21	1,657,279.10	233,414.80	1,068,704.31	----
Lane	10,884,121.21	5,624,698.27	1,784,732.06	3,380,034.69	94,656.19
Lincoln	7,234,898.87	4,940,760.13	218,673.57	2,074,718.20	746.97
Linn	5,827,698.72	3,083,584.31	451,737.03	2,186,566.37	105,811.01
Malheur	3,975,080.20	2,267,514.32	256,725.86	1,420,840.02	30,000.00
Marion	3,615,740.66	1,450,104.61	238,133.29	1,926,432.31	1,070.45
Morrow	1,561,915.61	1,080,382.57	317,758.89	162,014.32	1,759.83
Multnomah	7,982,476.35	3,713,788.30	62,825.83	4,118,715.32	87,146.90
Polk	3,411,522.15	1,924,247.39	155,023.89	1,330,861.77	1,389.10
Sherman	1,702,669.67	715,681.54	273,903.11	711,337.23	1,747.79
Tillamook	5,604,448.11	3,475,085.04	511,286.51	1,582,033.29	36,043.27
Umatilla	6,542,184.84	3,458,162.87	641,760.35	2,415,700.41	26,561.21
Union	3,739,078.35	2,171,962.41	602,607.02	799,187.76	165,321.16
Wallowa	1,465,651.22	748,698.74	361,995.78	354,956.70	----
Wasco	6,221,240.12	3,055,995.23	868,761.50	2,286,253.73	10,229.66
Washington	4,933,747.95	3,538,189.31	100,412.78	1,283,892.07	11,253.79
Wheeler	2,554,386.21	1,386,657.28	189,078.49	978,650.44	----
Yamhill	3,942,392.76	2,171,606.00	435,108.76	1,315,543.46	20,134.54
Flight Strips	1,130,218.35	24,689.72	----	1,105,528.63	----
Undistributed	5,607.61	5,607.61	----	----	----
Totals	$170,548,841.21	$ 96,940,610.47	$14,974,497.30	$57,565,574.77	$ 1,068,158.67
Primary maintenance	61,845,325.15	61,583,450.41	84,302.28	175,677.90	1,894.56
Secondary construction	15,284,407.81	8,885,805.38	426,015.94	5,971,931.15	655.34
Secondary maintenance	11,028,716.29	11,012,377.86	2,418.41	13,920.02	----
County road construction	6,678,257.38	3,004,308.01	345,669.77	3,278,473.19	49,806.41
County road maintenance	970,385.18	962,936.03	1,643.53	5,805.62	----
General purposes	105,664,365.98	105,104,067.54	26,709.26	533,589.18	----
Grand totals	$372,020,299.00	$287,493,555.70	$15,861,256.49	$67,544,971.83	$ 1,120,514.98

Table No. 14

EXPENDITURES FOR PRIMARY HIGHWAY MAINTENANCE WORK SUMMARIZED BY COUNTIES

From 1917 to June 30, 1946

This table gives the totals of the expenditures made for primary highway maintenance work in each of the several counties during the 30-year period ending June 30, 1946. It includes all expenditures for special maintenance and general maintenance.

County	Total Amount Expended	Cooperation in Expenditures			
		By State	By County	By Federal Government	By Miscel. Contributors
Baker	$ 2,329,731.32	$ 2,329,535.16	$ 196.16	$	$
Benton	1,606,298.38	1,605,982.57	315.81		
Clackamas	1,549,813.36	1,549,572.39	240.97		
Clatsop	1,837,352.63	1,827,661.96	8,796.11		894.56
Columbia	767,020.92	767,020.92			
Coos	2,719,297.26	2,681,986.78	6,728.62	30,581.86	
Crook	739,585.96	739,585.96			
Curry	1,691,986.25	1,687,608.39	205.18	4,172.68	
Deschutes	1,882,712.92	1,870,466.57	240.10	12,006.25	
Douglas	2,839,426.55	2,835,285.72	4,140.83		
Gilliam	1,222,794.51	1,220,495.37	2,299.14		
Grant	1,573,604.63	1,571,174.46	2,430.17		
Harney	926,645.43	926,533.51	111.92		
Hood River	1,410,912.88	1,404,792.20		6,120.68	
Jackson	2,472,996.54	2,468,449.21	4,547.33		
Jefferson	751,125.91	745,304.99		5,820.92	
Josephine	939,943.91	938,302.32	1,641.59		
Klamath	3,932,050.23	3,924,418.25	48.52	7,583.46	
Lake	1,355,395.20	1,340,653.95		14,741.25	
Lane	3,267,229.70	3,245,793.72	1,899.06	19,536.92	
Lincoln	2,082,267.35	2,076,541.39	320.50	5,405.46	
Linn	1,574,815.16	1,566,198.42	2,467.70	6,149.04	
Malheur	1,674,793.69	1,674,333.93	459.76		
Marion	691,697.60	691,487.19	210.41		
Morrow	1,084,478.49	1,076,910.27	2,976.73	4,591.49	
Multnomah	1,423,943.58	1,423,943.58			
Polk	925,903.94	925,304.87	599.07		
Sherman	852,114.38	844,807.22		7,307.16	
Tillamook	2,337,990.44	2,319,933.14	8,779.59	8,277.71	1,000.00
Umatilla	3,177,829.98	3,128,777.46	5,669.50	43,383.02	
Union	2,114,850.24	2,114,335.55	514.69		
Wallowa	901,194.09	901,194.09			
Wasco	2,129,354.50	2,128,577.89	776.61		
Washington	792,670.17	781,129.42	11,540.75		
Wheeler	938,017.51	936,323.79	1,693.72		
Yamhill	1,239,120.23	1,224,668.49	14,451.74		
Supervision	1,943,415.64	1,943,415.64			
Undistributed	144,943.67	144,943.67			
Totals	$61,845,325.15	$61,583,450.41	$ 84,302.28	$ 175,677.90	$ 1,894.56

Table No. 15

EXPENDITURES FOR SECONDARY STATE HIGHWAY CONSTRUCTION WORK SUMMARIZED BY COUNTIES

From 1932 to June 30, 1946

This table gives the totals of the expenditures made for secondary highway construction work in each of the several counties during the 15-year period ending June 30, 1946. It includes expenditures for construction, minor betterments, surveys, engineering county construction and state expenditures in connection with forest highway work.

County	Total Amount Expended	Cooperation in Expenditures			
		By State	By County	By Federal Government	By Miscel. Contributors
Baker	$ 122,749.16	$ 117,556.16	$	$ 5,193.00	$ .....
Benton	367,555.22	275,620.56	2,350.00	89,584.66	.....
Clackamas	681,735.36	383,920.25	47,825.95	249,989.16	.....
Clatsop	585,746.54	265,819.67	9,070.98	310,855.89	.....
Columbia	415,611.24	221,719.06	.....	193,892.18	.....
Coos	650,339.80	323,957.95	2,000.00	324,381.85	.....
Crook	329,744.93	246,337.64	34,411.29	48,996.00	.....
Curry	35,772.06	12,892.80	.....	22,879.26	.....
Deschutes	258,705.34	222,460.15	36,245.19	.....	.....
Douglas	292,731.53	277,241.72	.....	15,489.81	.....
Gilliam	168,275.56	125,255.84	.....	43,019.72	.....
Grant	155,193.82	59,280.07	9,086.75	86,827.00	.....
Harney	183,765.04	160,568.44	23,196.60	.....	.....
Hood River	243,159.15	181,016.47	.....	62,142.68	.....
Jackson	718,319.66	596,711.04	.....	121,608.62	.....
Jefferson	109,015.21	93,315.21	.....	15,700.00	.....
Josephine	195,769.53	56,678.92	.....	139,090.61	.....
Klamath	347,846.05	72,075.72	70,558.62	205,211.71	.....
Lake	101,930.25	93,628.80	.....	8,301.45	.....
Lane	724,740.28	484,583.98	59,856.49	179,644.47	655.34
Lincoln	476,986.38	309,129.48	.....	167,856.90	.....
Linn	463,970.98	334,291.22	23,000.00	106,679.76	.....
Malheur	2,041,021.11	658,115.91	.....	1,382,905.20	.....
Marion	801,815.86	568,574.69	.....	233,241.17	.....
Morrow	391,391.39	251,490.72	.....	139,900.67	.....
Multnomah	974,538.32	429,164.44	.....	545,373.88	.....
Polk	958,991.66	249,737.89	.....	709,253.77	.....
Sherman	50,853.47	50,853.47	.....	.....	.....
Tillamook	142,992.38	121,033.59	.....	21,958.79	.....
Umatilla	922,148.61	686,008.54	92,939.72	143,200.35	.....
Union	355,220.16	269,742.16	.....	85,478.00	.....
Wallowa	111,504.34	42,752.44	.....	68,751.90	.....
Wasco	69,351.79	63,890.36	5,461.43	.....	.....
Washington	407,105.42	222,367.08	.....	184,738.34	.....
Wheeler	96,082.60	80,136.60	5,000.00	10,946.00	.....
Yamhill	331,727.61	277,876.34	5,012.92	48,838.35	.....
Totals	$15,284,407.81	$ 8,885,805.38	$ 426,015.94	$5,971,931.15	$ 655.34

Table No. 16

EXPENDITURES FOR SECONDARY HIGHWAY MAINTENANCE WORK SUMMARIZED BY COUNTIES

From 1932 to June 30, 1946

This table gives the totals of the expenditures made for secondary highway maintenance work in each of the several counties during the 15-year period ending June 30, 1946. It includes expenditures for special maintenance and general maintenance.

County	Total Amount Expended	Cooperation in Expenditures		
		By State	By County	By Federal Government
Baker	$ 267,041.63	$ 267,007.90	$ 33.73	$
Benton	176,799.03	176,799.03		
Clackamas	792,202.41	792,202.41		
Clatsop	398,534.41	392,617.16		5,917.25
Columbia	342,106.85	342,106.85		
Coos	506,784.04	506,784.04		
Crook	182,997.08	182,997.08		
Curry	12,394.42	12,394.42		
Deschutes	239,615.48	239,615.48		
Douglas	353,274.56	353,274.56		
Gilliam	53,867.27	53,867.27		
Grant	61,114.32	61,114.32		
Harney	136,620.37	136,620.37		
Hood River	102,142.11	102,142.11		
Jackson	403,506.50	398,693.38	275.14	4,537.98
Jefferson	20,448.54	20,448.54		
Josephine	138,273.73	136,821.76		1,451.97
Klamath	529,892.08	529,892.08		
Lake	102,068.25	102,068.25		
Lane	740,320.51	740,212.51	108.00	
Lincoln	284,016.79	284,016.79		
Linn	575,619.65	575,619.65		
Malheur	468,693.42	468,693.42		
Marion	511,821.05	511,821.05		
Morrow	215,670.89	215,670.89		
Multnomah	97,365.71	97,365.71		
Polk	471,354.70	471,354.70		
Sherman	62,645.15	62,645.15		
Tillamook	88,968.42	88,968.42		
Umatilla	716,914.27	712,899.91	2,001.54	2,012.82
Union	339,818.95	339,818.95		
Wallowa	106,499.07	106,499.07		
Wasco	50,884.70	50,884.70		
Washington	541,889.17	541,889.17		
Wheeler	120,766.64	120,766.64		
Yamhill	477,287.67	477,287.67		
Maintenance Supervision	338,496.45	338,496.45		
Totals	$11,028,716.29	$11,012,377.86	$ 2,418.41	$ 13,920.02

Table No. 17

EXPENDITURES FOR COUNTY ROAD CONSTRUCTION WORK SUMMARIZED BY COUNTIES

To June 30, 1946

This table gives the totals of the expenditures made for construction of highways, and city streets, that are not on the state highway system to June 30, 1946. It includes expenditures for construction, surveys, engineering county construction, and state expenditures in connection with forest highway work.

County	Total Amount Expended	Cooperation in Expenditures			
		By State	By County	By Federal Government	By Miscel. Contributors
Baker	$ 138,887.70	$ 90,596.10	$ 14,091.98	$ 34,199.62	$
Benton	155,162.72	129,599.73		25,562.99	
Clackamas	317,783.95	200,916.60	24,102.11	92,528.35	236.89
Clatsop	145,299.33	103,397.66	132.79	41,768.88	
Columbia	84,775.69	17,304.91	116.36	67,354.42	
Coos	201,720.36	35,142.77		166,577.59	
Crook					
Curry	1,346.44	1,346.44			
Deschutes	183,430.63	130,863.06	15,551.57	36,366.00	650.00
Douglas	392,630.83	249,658.82	14,295.68	121,676.33	7,000.00
Gilliam	7,936.65		7,936.65		
Grant	77.92	77.92			
Harney					
Hood River	324.09	324.09			
Jackson	291,480.30	69,792.35	10,878.40	210,809.55	
Jefferson	26,980.74	3,107.85	3,800.00	20,072.89	
Josephine	137,217.83	125,143.83		12,074.00	
Klamath	474,944.23	125,026.70	15,575.07	331,321.08	3,021.38
Lake	158,364.78	41,351.67	23,287.43	92,700.00	1,025.68
Lane	203,077.94	172,261.93	22,536.52	6,582.83	1,696.66
Lincoln	5,206.30	3,869.23		1,337.07	
Linn	160,497.66	76,918.45	44,081.21	39,498.00	
Malheur	65,281.51	20,544.93	13,996.58	30,740.00	
Marion	496,639.73	369,293.60	22,600.20	104,745.93	
Morrow	2,515.77	2,515.77			
Multnomah	1,441,591.70	204,412.48	5,701.90	1,219,660.32	11,817.00
Polk	76,383.41	31,562.61	2,104.80	42,716.00	
Sherman	155,447.58	78,159.66	419.50	76,868.42	
Tillamook	197,238.31	82,813.00	33,426.77	78,892.98	2,105.56
Umatilla	77,327.34	39,003.06	7,018.70	31,305.58	
Union	95,089.42	44,799.54		50,289.88	
Wallowa	98,442.20	44,616.60	10,770.60	43,055.00	
Wasco	214,110.91	127,270.07	21,933.27	64,907.57	
Washington	388,013.47	235,557.47	14,322.79	138,133.21	
Wheeler	23,486.88	13,380.88		10,106.00	
Yamhill	259,543.06	133,678.23	16,988.89	86,622.70	22,253.24
Totals	$ 6,678,257.38	$ 3,004,308.01	$ 345,669.77	$3,278,473.19	$ 49,806.41

Table No. 18

EXPENDITURES FOR COUNTY ROAD AND CITY STREET MAINTENANCE WORK SUMMARIZED BY COUNTIES

To June 30, 1946

This table gives the total expenditures for maintenance work on highways and city streets that are not on the state highway system. It includes expenditures for maintenance of county road signs, prior maintenance of sections of state highways which have been abandoned, and maintenance of city streets.

County	Total Amount Expended	Cooperation in Expenditures		
		By State	By County	By Federal Government
Baker	$ 114,909.56	$ 114,349.67	$ 559.89	$
Benton	26,038.85	26,038.85		
Clackamas	34,087.28	34,087.28		
Clatsop	28,220.94	28,220.94		
Columbia	9,841.03	9,841.03		
Coos	18,849.03	16,536.01		2,313.02
Crook	1,636.79	1,636.79		
Curry	1,062.21	1,062.21		
Deschutes	10,280.91	10,280.91		
Douglas	29,796.46	29,154.07	642.39	
Gilliam	1,398.19	1,398.19		
Grant	2,748.63	2,748.63		
Harney	1,901.42	1,901.42		
Hood River	6,844.26	6,844.26		
Jackson	74,474.89	74,474.89		
Jefferson	5,851.70	5,851.70		
Josephine	40,911.86	40,911.86		
Klamath	80,047.95	80,047.95		
Lake	11,396.34	11,396.34		
Lane	63,683.62	63,683.62		
Lincoln	4,605.30	4,605.30		
Linn	70,312.94	69,900.18	412.76	
Malheur	6,727.01	6,727.01		
Marion	64,469.23	64,469.23		
Morrow	3,106.10	3,106.10		
Multnomah	54,495.74	54,495.74		
Polk	95,295.61	95,295.61		
Sherman	1,527.79	1,527.79		
Tillamook	7,470.77	4,045.64		3,425.13
Umatilla	43,595.20	43,499.24	28.49	67.47
Union	8,617.02	8,617.02		
Wallowa	3,517.53	3,517.53		
Wasco	8,132.94	8,132.94		
Washington	17,953.04	17,953.04		
Wheeler	708.76	708.76		
Yamhill	13,672.58	13,672.58		
Undistributed	2,195.70	2,195.70		
Totals	$ 970,385.18	$ 962,936.03	$ 1,643.53	$ 5,805.62

Table No. 19

FOREST HIGHWAY EXPENDITURES ON STATE HIGHWAY ROUTES CLASSIFIED BY COUNTIES

Years 1917 to 1945, Inclusive

In this table are given the expenditures that have been made in connection with forest highway construction work on the state highway system. This work was supervised by the United States Public Roads Administration, and the amounts of Federal Government expenditures and county expenditures here shown are as reported by that bureau. The state expenditures shown are also included in the foregoing tables Nos. 11, 15 and 17, but the Federal Government and county expenditures are not included in those tables. For a classification of these expenditures by highways see table No. 20.

County	Total Amount Expended	Cooperation in Expenditures		
		By State	By County	By Federal Government
Baker	$ 185,357.66	$ 44,845.60	$ 584.00	$ 140,928.06
Clackamas	1,079,825.54	525,124.95	.....	554,700.59
Coos	231,790.61	.....	83,000.00	148,790.61
Crook	132,637.00	39,634.17	26,875.00	66,127.83
Curry	463,506.51	116,289.11	30,000.00	317,217.40
Deschutes	364,154.83	144,378.47	5,000.00	214,776.36
Douglas	1,969,301.40	397,798.62	275,054.98	1,296,447.80
Grant	2,066,277.64	159,639.74	250,046.25	1,656,591.65
Harney	406,833.59	.....	65,000.00	341,833.59
Hood River	756,801.96	314,844.19	.....	441,957.77
Jackson	1,399,697.10	296,095.20	3,438.81	1,100,163.09
Jefferson	350,725.39	56,000.00	13,000.00	281,725.39
Josephine	504,894.27	294,433.59	17,522.99	192,937.69
Klamath	1,059,276.67	209,114.95	179,954.97	670,206.75
Lake	1,007,960.56	227,455.92	.....	780,504.64
Lane	5,697,104.50	1,488,575.43	312,500.00	3,896,029.07
Lincoln	2,907,076.49	889,652.93	315,000.00	1,702,423.56
Linn	2,321,905.42	.....	* 202,014.00	2,119,891.42
Marion	442,147.82	.....	173,586.00	268,561.82
Morrow	140,057.14	.....	75,000.00	65,057.14
Multnomah	258,046.14	27,500.00	.....	230,546.14
Tillamook	1,052,580.61	328,153.51	18,624.69	705,802.41
Umatilla	848,215.31	155,287.23	145,718.32	547,209.76
Union	437,389.42	.....	.....	437,389.42
Wallowa	559,586.36	67,951.65	39,210.35	452,424.36
Wasco	569,861.78	180,844.08	25,000.00	364,017.70
Wheeler	568,510.96	105,060.12	29,900.00	433,550.84
Totals	$27,782,522.68	$ 6,068,679.46	$ 2,286,030.36	$19,427,812.86

* Includes $84,014.00 Marion County expenditures on the North Santiam Highway in Linn County.

Table No. 20

FOREST HIGHWAY EXPENDITURES ON STATE HIGHWAY ROUTES CLASSIFIED BY HIGHWAYS

Years 1917 to 1945, Inclusive

In this table are given the expenditures that have been made in connection with forest highway construction work on the state highway system. This work was supervised by the United States Public Roads Administration, and the amounts of Federal Government expenditures and county expenditures here shown are as reported by that bureau. The state expenditures shown are also included in the foregoing tables Nos. 11, 15 and 17, but the Federal Government and county expenditures are not included in those tables. For a classification of these expenditures by counties see table No. 19.

Hwy. No.	Highway	Total Amount Expended	Cooperation in Expenditures		
			By State	By County	By Federal Government
1	Pacific, Junction City-South	$ 310,237.67	$ 182,776.86	$ 23,000.00	$ 104,460.81
2	Columbia River	515,495.09	92,500.00	.....	422,995.09
4	The Dalles-California	648,505.02	178,806.28	149,592.81	320,105.93
5	John Day	725,930.61	174,485.34	162,110.76	389,334.51
9	Oregon Coast	3,174,549.41	1,068,915.37	233,000.00	1,872,634.04
11	Enterprise-Lewiston	439,624.44	67,951.65	39,210.35	332,462.44
15	McKenzie	898,606.12	429,278.06	20,000.00	449,328.06
16	Santiam	1,888,520.19	56,000.00	131,000.00	1,701,520.19
18	Willamette	2,348,395.15	196,000.00	37,500.00	2,114,895.15
19	Fremont	357,494.37	879.37	.....	356,615.00
20	Klamath Falls-Lakeview	706,535.01	226,919.50	.....	479,615.51
22	Crater Lake	691,466.47	301,060.92	26,300.97	364,104.58
25	Redwood	194,160.63	130,121.32	9,522.99	54,516.32
26	Mt. Hood	1,236,898.94	566,436.42	.....	670,462.52
27	Alsea	1,027,992.67	410,818.40	165,000.00	452,174.27
28	Pendleton-John Day	1,342,334.64	185,287.23	202,218.32	954,829.09
32	Three Rivers	423,943.55	149,528.51	18,624.69	255,790.35
34	Siuslaw	1,962,790.55	708,521.94	260,000.00	994,268.61
38	Oregon Caves	310,733.64	164,312.27	8,000.00	138,421.37
39	Salmon River	1,034,305.79	180,000.00	.....	854,305.79
41	Ochoco	373,930.17	144,694.29	31,775.00	197,460.88
44	Wapinitia	772,295.65	281,376.80	25,000.00	465,918.85
45	Umpqua	323,273.90	.....	128,001.65	195,272.25
48	John Day-Burns	1,293,424.59	.....	97,019.49	1,196,405.10
53	Warm Springs	31,845.74	.....	.....	31,845.74
162	North Santiam	1,295,317.04	.....	257,600.00	1,037,717.04
181	Siletz	147,634.94	.....	30,000.00	117,634.94
230	Tiller-Trail	1,041,909.57	58,333.33	124,053.33	859,522.91
232	Crater Lake-North	70,669.32	.....	.....	70,669.32
233	West Diamond Lake	638,536.94	.....	.....	638,536.94
321	Heppner-Spray	467,274.93	.....	100,000.00	367,274.93
330	Weston-Elgin	583,383.78	.....	.....	583,383.78
350	Little Sheep Creek	119,961.92	.....	.....	119,961.92
421	Klamath Lake	7,683.46	.....	.....	7,683.46
424	Sand Creek	53,314.04	.....	.....	53,314.04
425	East Diamond Lake	209,871.13	.....	7,500.00	202,371.13
	Timberline (Coop. project)	108,000.00	108,000.00	.....	.....
	Cascade Lakes (Coop. project)	5,675.60	5,675.60	.....	.....
	Totals	$27,782,522.68	$6,068,679.46	$2,286,030.36	$19,427,812.86

Table No. 21

STATISTICS PERTAINING TO FOREST HIGHWAY WORK ON STATE HIGHWAYS

The statistics here given apply to highway work in the State of Oregon performed under the supervision of the Public Roads Administration. All of the work included is upon state highways at points where these highways are in or adjacent to National Forests. The work is financed under cooperative agreements between the federal government, the state and the counties of the state, the federal funds being Oregon's proportionate share of funds annually appropriated by Congress for forest road work.

The amounts of county and federal government expenditures here given, and the mileages of work performed, are as reported by the Public Roads Administration. The amounts of state expenditures are as shown by the disbursement records of the State Highway Commission.

EXPENDITURES ON FOREST HIGHWAY WORK

Year	Expenditures			
	State Funds	County Funds	Government Funds	Total
1918-1919-1920	$ 809,261.58	$ 102,271.45	$ 656,898.98	$ 1,568,432.01
1921-1922	724,970.53	67,142.21	838,476.39	1,630,589.13
1923-1924	1,092,660.31	725,942.05	1,969,408.97	3,788,011.33
1925-1926	759,762.58	481,431.18	827,352.74	2,068,546.50
1927	147,859.76	170,611.36	471,300.10	789,771.22
1928	103,084.09	75,263.79	436,562.96	614,910.84
1929	82,000.00	42,000.00	553,063.92	677,063.92
1930	696,986.98	108,050.00	662,796.90	1,467,833.88
1931	653,385.58	258,000.00	2,208,230.75	3,119,616.33
1932	202,700.00	41,474.39	534,249.28	778,423.67
1933	138,913.87	211,586.74	1,495,151.29	1,845,651.90
1934	28,416.93	Cr. 1,000.00	2,108,246.42	2,135,663.35
1935	52,501.65	Cr. 2,842.81	1,047,757.99	1,097,416.83
1936	205,000.00	.....	962,044.72	1,167,044.72
1937	112,500.00	.....	1,401,278.74	1,513,778.74
1938	Cr. 25,000.00	6,100.00	962,953.77	944,053.77
1939	35,000.00	.....	960,602.57	995,602.57
1940	.....	.....	580,947.92	580,947.92
1941	285,500.00	.....	306,441.05	591,941.05
1942	.....	.....	237,410.05	237,410.05
1943	Cr. 36,824.40	.....	52,606.27	15,781.87
1944	.....	.....	37,036.29	37,036.29
1945	.....	.....	116,994.79	116,994.79
Totals	$ 6,068,679.46	$ 2,286,030.36	$19,427,812.86	$27,782,522.68

Table No. 21—Continued

MILEAGES OF FOREST HIGHWAY WORK COMPLETED ON STATE HIGHWAY SYSTEM

Year	Concrete Pavement (Miles)	Bituminous Macadam (Miles)	Oiled Surfacing (Miles)	Unoiled Surfacing (Miles)	Graded Only (Miles)
1918	.....	.....	.....	.....	4.30
1919	.....	.....	.....	.....	62.90
1920	.....	.....	.....	22.59	56.10
1921	.....	.....	.....	38.24	20.68
1922	.....	.....	.....	22.37	15.69
1923	.....	.....	.....	87.92	61.00
1924	.....	.....	.....	74.62	153.37
1925	.....	.....	.....	99.94	50.70
1926	.....	.....	.....	41.41	52.32
1927	.....	.....	.....	53.50	39.80
1928	.....	.....	.....	17.60	23.80
1929	.....	.....	.....	6.00	19.00
1930	.....	.....	.....	25.88	30.35
1931	.....	.....	.....	21.35	61.29
1932	.....	.....	.....	28.36	14.61
1933	.....	24.94	.....	74.31	28.33
1934	.....	24.65	53.51	18.08	19.65
1935	.....	.....	30.71	.....	8.38
1936	.....	.....	.....	43.59	41.84
1937	0.18	37.26	23.22	41.73	17.85
1938	.....	8.36	7.10	23.31	23.04
1939	.....	16.89	20.69	37.78	8.55
1940	.....	6.07	40.34	46.41	25.00
1941	.....	.....	.....	7.63	.....
1942	.....	5.21	3.87	16.72	13.03
1943	.....	5.24	.....	5.24	5.24
1944	.....	.....	.....	.....	.....
1945	.....	.....	.....	.....	.....
Totals	0.18	128.62	179.44	854.58	856.82

Table No. 22

COUNTY DISBURSEMENTS FOR ROAD PURPOSES

1941 to 1945, Inclusive

County	1941	1942	1943	1944	1945
Baker	$ 91,503.61	$ 32,087.12	$ 25,081.13	$ 72,466.70	$ 130,819.74
Benton	100,801.97	74,468.12	72,013.73	93,253.82	130,961.69
Clackamas	242,870.61	*195,000.00	*185,000.00	248,259.40	341,798.50
Clatsop	209,355.94	82,871.55	68,034.09	105,664.92	143,638.01
Columbia	130,481.95	138,549.76	130,337.11	152,191.29	162,741.04
Coos	206,364.42	169,421.54	120,912.36	148,331.09	174,641.51
Crook	34,749.45	18,665.61	28,855.11	35,346.34	24,781.71
Curry	19,494.90	26,300.93	15,121.12	* 20,000.00	* 20,000.00
Deschutes	46,847.11	17,323.00	21,170.00	32,076.60	26,899.88
Douglas	211,844.03	234,366.37	257,029.75	310,735.87	281,157.01
Gilliam	34,178.39	33,842.71	19,283.26	*25,000.00	*25,000.00
Grant	61,075.80	39,892.08	24,612.60	44,741.06	58,733.77
Harney	46,031.29	42,095.34	34,088.06	46,563.99	33,334.76
Hood River	51,839.54	50,918.31	49,673.44	*50,000.00	*50,000.00
Jackson	236,886.32	137,154.96	139,250.87	161,086.01	158,129.07
Jefferson	12,436.49	12,624.89	16,398.82	20,543.31	36,433.68
Josephine	75,351.76	68,088.63	66,398.44	67,940.59	95,898.07
Klamath	164,666.29	*130,000.00	*130,000.00	266,600.00	295,850.00
Lake	39,973.14	* 50,000.00	* 50,000.00	*45,000.00	*45,000.00
Lane	427,449.15	390,114.45	410,910.17	421,867.57	574,540.99
Lincoln	70,814.16	* 35,000.00	35,740.25	119,195.69	85,872.01
Linn	425,746.26	226,129.96	269,492.68	274,005.52	337,777.79
Malheur	18,183.38	28,181.26	20,265.35	98,995.28	141,674.05
Marion	281,906.68	160,527.59	129,895.42	253,532.65	253,532.65
Morrow	66,084.31	47,095.32	33,224.81	43,664.57	44,387.60
Multnomah	831,526.31	754,275.32	835,286.02	629,341.28	800,524.55
Polk	120,578.14	123,963.23	133,839.74	166,051.57	166,475.30
Sherman	32,325.00	28,644.14	25,130.91	18,203.63	32,727.55
Tillamook	*110,000.00	96,721.19	106,163.26	*100,000.00	*100,000.00
Umatilla	180,350.34	146,543.01	150,336.12	190,688.29	189,894.26
Union	161,555.60	80,672.43	72,866.86	95,161.66	128,829.00
Wallowa	72,423.23	65,088.86	41,511.73	56,318.47	61,921.80
Wasco	103,504.13	60,398.71	67,937.87	83,456.44	109,495.91
Washington	288,120.88	251,669.11	234,379.22	250,649.46	315,484.35
Wheeler	14,546.63	* 10,000.00	* 10,000.00	*12,000.00	*12,000.00
Yamhill	197,358.14	118,308.68	167,043.62	*150,000.00	*150,000.00
Totals	$5,419,225.35	$4,177,004.18	$4,197,283.92	$4,908,933.07	$5,740,956.25

* These are estimated expenditures, as no reports were received from the counties.

Table No. 23

STATE HIGHWAY BOND INDEBTEDNESS ACCOUNT

Calendar Year	Annual Principal	Annual Interest	Annual Total	Bonds Outstanding At End of Year
1917	$	$ 5,000.00	$ 5,000.00	$ 1,400,000.00
1918		72,900.00	72,900.00	2,840,000.00
1919		141,099.99	141,099.99	10,140,000.00
1920		503,725.00	503,725.00	19,140,000.00
1921		974,870.83	974,870.83	30,700,000.00
1922	125,000.00	1,521,266.67	1,646,266.67	36,075,000.00
1923	179,750.00	1,742,150.00	1,921,900.00	38,395,250.00
1924	334,500.00	1,824,240.00	2,158,740.00	38,060,750.00
1925	3,797,000.00	1,799,267.05	5,596,267.05	37,263,750.00
1926	1,197,000.00	1,722,761.65	2,919,761.65	36,066,750.00
1927	1,600,000.00	1,663,215.87	3,263,215.87	34,466,750.00
1928	1,750,000.00	1,586,060.99	3,336,060.99	32,716,750.00
1929	1,825,000.00	1,503,578.47	3,328,578.47	30,891,750.00
1930	1,925,000.00	1,418,314.70	3,343,314.70	30,466,750.00
1931	1,975,000.00	1,386,522.18	3,361,522.18	29,491,750.00
1932	2,975,000.00	1,369,435.06	4,344,435.06	27,516,750.00
1933	1,975,000.00	1,290,992.54	3,265,992.54	27,041,750.00
1934①	2,175,000.00	1,250,010.02	3,425,010.02	25,866,750.00
1935①	5,675,000.00	1,225,541.73②	6,900,541.73	25,691,750.00
1936①	2,950,000.00	1,089,213.37	4,039,213.37	23,441,750.00
1937③	2,800,000.00	984,228.06	3,784,228.06	21,641,750.00
1938③	3,550,000.00	877,764.27	4,427,764.27	18,841,750.00
1939	2,000,000.00	776,394.23	2,776,394.23	16,841,750.00
1940	2,075,000.00	683,724.19	2,758,724.19	14,766,750.00
1941	2,150,000.00	589,085.40	2,739,085.40	12,616,750.00
1942	2,125,000.00	493,790.36	2,618,790.36	10,491,750.00
1943	2,070,250.00	399,995.32	2,470,245.32	8,421,500.00
1944	1,915,500.00	308,610.28	2,224,110.28	6,506,000.00
1945	1,453,000.00	227,913.99	1,680,913.99	5,053,000.00
1946	1,053,000.00	166,998.95	1,219,998.95	4,000,000.00
1947	650,000.00	126,765.80	776,765.80	3,350,000.00
1948	500,000.00	104,109.53	604,109.53	2,850,000.00
1949	425,000.00	86,797.01	511,797.01	2,425,000.00
1950	325,000.00	72,171.99	397,171.99	2,100,000.00
1951	275,000.00	62,046.97	337,046.97	1,825,000.00
1952	275,000.00	52,984.45	327,984.45	1,550,000.00
1953	275,000.00	43,921.93	318,921.93	1,275,000.00
1954	275,000.00	34,859.41	309,859.41	1,000,000.00
1955	275,000.00	25,796.89	300,796.89	725,000.00
1956	200,000.00	17,531.25	217,531.25	525,000.00
1957	150,000.00	12,187.50	162,187.50	375,000.00
1958	150,000.00	8,437.50	158,437.50	225,000.00
1959	150,000.00	4,687.50	154,687.50	75,000.00
1960	75,000.00	937.50	75,937.50	
	$55,650,000.00	$30,251,906.40	$85,901,906.40	
Less refunding and temporary financing bonds	11,450,000.00		11,450,000.00	
Totals①	$44,200,000.00	$30,251,906.40	$74,451,906.40	

① Includes Coast Bridge short-term bonds.

② Includes $4,866.50 refund to cover accrued interest paid in by Ladd & Bush, Bankers, on Coast Bridge bonds.

③ Includes retirement of 1937 and 1938 short-term bonds.

Table No. 24

STATE HIGHWAY BONDS ISSUED, 1917 TO 1946

Year	Par Value of Bonds Sold: Long-term Construction Bonds	Par Value of Bonds Sold: Short-term Bonds for Temporary Financing	Time for Retirement	Bonds Retired Same Year
1917	$ 400,000	$	8 years	$ .....
	1,000,000	.....	25 years	.....
1918	1,440,000	.....	25 years	.....
1919	800,000	.....	14 years	.....
	6,500,000	.....	25 years	.....
1920	9,000,000	.....	25 years	.....
1921	.....	3,000,000①	4 years	.....
	8,560,000	.....	25 years	.....
1922	5,500,000	.....	25 years	125,000
1923	2,500,000	.....	25 years	179,750
1924	.....	.....	.....	334,500
1925	3,000,000	.....	25 years	3,797,000
1926	.....	.....	.....	1,197,000
1927	.....	.....	.....	1,600,000
1928	.....	.....	.....	1,750,000
1929	.....	.....	25 years	1,825,000
1930	1,500,000②	.....	25 years	1,925,000
1931	1,000,000③	.....	25 years	1,975,000
1932	.....	1,000,000④	6 months	2,975,000
1933	.....	1,500,000⑤	5 years	1,975,000
1934	.....	1,000,000⑥	1 year	2,175,000
1935	3,000,000⑦	.....	25 years	3,175,000
	.....	1,000,000⑥	6 months	1,000,000
	.....	1,500,000⑧	10 days	1,500,000
1936	.....	700,000⑧	10 days	2,950,000
1937	.....	1,000,000⑧	6 months	2,800,000⑨
1938	.....	750,000⑧	8 months	3,550,000⑩
1939	.....	.....	.....	2,000,000
1940	.....	.....	.....	2,075,000
1941	.....	.....	.....	2,150,000
1942	.....	.....	.....	2,125,000
1943	.....	.....	.....	2,070,250
1944	.....	.....	.....	1,915,500
1945	.....	.....	.....	1,453,000
1946	.....	.....	.....	1,053,000
Totals	$44,200,000	$11,450,000	.....	$51,650,000
Bonds retired	40,200,000	11,450,000	.....	51,650,000
Bonds outstanding end of 1946	$ 4,000,000	$	.....	$ .....

① Account of unfavorable bond market, $3,000,000 of 4-year bonds were sold with intention to refund in 1925 with long-term bonds at lower interest rate.

② This bond sale made to enable state to match available federal aid.

③ This bond sale made to finance state relief labor program.

④ This sale of 6-months bonds was made to overcome a deficit caused by change in date of licensing cars from January 1st to July 1st.

⑤ This sale of 5-year bonds was made to finance state relief program.

⑥ These sales of short-term bonds made to finance the construction of the five Oregon Coast bridges.

⑦ This sale was made to refund a like amount of Oregon Coast Bridge bonds, resulting in a saving of interest.

⑧ These sales of short-term bonds were made to enable the State to utilize its winter income in carrying on its federal aid program during the preceding summer construction season.

⑨ Includes $500,000 of 1937 short-term bonds retired December 31, 1937.

⑩ Includes $500,000 of 1937 short-term bonds retired January 31, 1938, and $750,000 of 1938 short-term bonds retired December 31, 1938.

Table No. 25

COUNTY BOND AND WARRANT INDEBTEDNESS IN CONNECTION WITH ROADS AND BRIDGES

July 1, 1946

The information contained in this table was compiled by the State Treasurer.

County	Bonds Outstanding	Road Warrants Outstanding	Total Road and Bridge Debt	Sinking Fund	Net Road and Bridge Debt
Baker	$	$	$	$	$
Benton					
Clackamas	20,000.00		20,000.00	14,901.33	5,098.67
Clatsop					
Columbia					
Coos	42,000.00		42,000.00	18,137.64	23,862.36
Crook	14,000.00		14,000.00	8,642.31	5,357.69
Curry					
Deschutes					
Douglas					
Gilliam	67,000.00		67,000.00	67,000.00	
Grant	162,000.00	17,191.84	179,191.84	33,087.02	146,104.82
Harney					
Hood River					
Jackson	4,000.00		4,000.00	4,000.00	
Jefferson					
Josephine					
Klamath	142,700.00		142,700.00	142,700.00	
Lake					
Lane	45,000.00		45,000.00	16,462.01	28,537.99
Lincoln					
Linn					
Malheur					
Marion					
Morrow	186,500.00		186,500.00	25,560.82	160,939.18
Multnomah	6,303,500.00		6,303,500.00	474,159.92	5,829,340.08
Polk					
Sherman					
Tillamook					
Umatilla					
Union					
Wallowa					
Wasco					
Washington					
Wheeler	79,000.00	4,402.18	83,402.18	36,614.57	46,787.61
Yamhill					
Totals	$7,065,700.00	$ 21,594.02	$7,087,294.02	$ 841,265.62	$6,246,028 40

Table No. 26

APPORTIONMENT OF MOTOR VEHICLE FEES TO COUNTIES

1920 to 1946, Inclusive

Prior to 1917, the total net revenues from motor vehicle license fees were reverted to the counties; from 1917 to 1919, inclusive, the entire net fees were reverted to the state highway fund; from 1920 to January 1, 1930, inclusive, one-quarter of the net fees were apportioned to the counties, and three-quarters to the state highway fund; and from January 1, 1930, to June 30, 1933, one-third of the net fees were apportioned to the counties and two-thirds to the state highway fund. The net revenues from motor transportation fees, from the beginning of the act authorizing the collection of such fees in 1927, to June 30, 1933, were apportioned one-quarter to the counties and three-quarters to the state highway fund. Subsequent to June 30, 1933, the entire net revenues from both sources were deposited into the state highway fund. During the four-year period from 1933 to 1936, the counties received $1,600,000 yearly. Subsequent to 1936, the yearly apportionment has been increased to 15.7 per cent of the total net state highway income, but to be not less than $2,000,000.

County	Total Apportionment 1920 to 1944	Apportionment Calendar Year 1945	Apportionment Calendar Year 1946	Total Apportionment 1920 to 1946
Baker	$ 642,812.99	$ 26,457.96	$ 29,833.79	$ 699,104.74
Benton	797,237.63	41,595.06	44,208.75	883,041.44
Clackamas	1,971,766.39	130,252.98	144,527.03	2,246,546.40
Clatsop	904,175.38	46,875.38	51,078.20	1,002,128.96
Columbia	726,188.46	39,336.94	43,284.29	808,809.69
Coos	1,192,936.81	55,846.86	61,469.89	1,310,253.56
Crook	167,763.12	12,022.66	13,182.38	192,968.16
Curry	146,423.09	7,470.38	8,848.57	162,742.04
Deschutes	718,689.94	37,187.34	40,596.06	796,473.34
Douglas	995,588.93	56,547.68	67,484.38	1,119,620.99
Gilliam	155,672.92	5,875.41	6,551.37	168,099.70
Grant	231,024.74	11,860.57	13,390.39	256,275.70
Harney	209,156.16	9,329.90	9,846.73	228,332.79
Hood River	495,629.25	21,160.24	24,244.55	541,034.04
Jackson	1,652,993.63	88,815.62	99,999.53	1,841,808.78
Jefferson	90,480.07	4,567.89	4,783.07	99,831.03
Josephine	580,372.70	36,899.59	43,475.78	660,748.07
Klamath	1,525,352.12	81,189.64	88,710.21	1,695,251.97
Lake	244,793.36	13,124.60	14,436.16	272,354.12
Lane	2,473,904.94	155,265.63	177,703.36	2,806,873.93
Lincoln	374,617.11	26,592.30	30,981.34	432,190.75
Linn	1,195,962.78	77,794.22	87,803.80	1,361,560.80
Malheur	504,626.95	35,927.72	40,564.46	581,119.13
Marion	2,900,484.51	143,400.38	160,609.16	3,204,494.05
Morrow	208,865.84	10,272.36	11,498.11	230,636.31
Multnomah	15,540,367.88	793,515.96	868,263.44	17,202,147.28
Polk	673,287.55	42,032.18	46,171.06	761,490.79
Sherman	161,239.89	5,990.28	6,761.07	173,991.24
Tillamook	546,431.32	28,399.36	31,083.95	605,914.63
Umatilla	1,244,906.72	65,813.95	72,671.34	1,383,392.01
Union	725,278.31	32,725.62	36,093.77	794,097.70
Wallowa	263,147.71	12,638.45	13,925.47	289,711.63
Wasco	606,630.52	24,115.89	27,669.38	658,415.79
Washington	1,433,021.34	94,915.80	104,782.08	1,632,719.22
Wheeler	106,486.57	5,029.45	5,276.34	116,792.36
Yamhill	1,050,393.70	59,902.23	66,618.39	1,176,914.32
Totals	$43,458,711.33	$2,340,748.48	*$2,598,427.65	$48,397,887.46

* Includes the July and December, 1946, apportionments.

Table No. 27

APPORTIONMENT OF MOTOR VEHICLE REVENUES TO CITIES—1944 TO 1946, INCLUSIVE

Beginning with the calendar year 1943, as provided by Chapter 371, Oregon Laws, 1943, the cities have annually received five (5) per cent of the state highway income from motor vehicle fees, motor transportation fees, gasoline tax, and fines for traffic law violations. The apportionment of the calendar year income is made the following February first, and is distributed in proportion to population, with the provision that a city of over 100,000 population receives an apportionment computed on two-thirds of its population. Payments are made only to incorporated cities having functioning city governments.

City	County	1944	1945	1946	Total
Adams	Umatilla	$ 232.11	$ 236.22	$ 253.84	$ 722.17
Albany	Linn	7,765.40	7,902.86	8,492.37	24,160.63
Amity	Yamhill	748.52	761.77	818.60	2,328.89
Antelope	Wasco	123.61	125.80	135.18	384.59
Arlington	Gilliam	836.42	851.23	914.72	2,602.37
Ashland	Jackson	6,515.58	6,630.91	7,125.54	20,272.03
Astoria	Clatsop	14,268.62	14,521.20	15,604.39	44,394.21
Athena	Umatilla	704.57	717.04	770.53	2,192.14
Aumsville	Marion	238.98	243.21	261.35	743.54
Aurora	Marion	313.14	318.69	342.46	974.29
Baker	Baker	12,830.64	13,057.76	14,031.78	39,920.18
Bandon	Coos	1,378.93	1,403.34	1,508.02	4,290.29
Banks	Washington	339.24	345.24	371.00	1,055.48
Barlow	Clackamas	71.42	72.68	78.10	222.20
Bay City	Tillamook	520.53	529.75	569.26	1,619.54
Beaverton	Washington	1,444.86	1,470.43	2,241.00	5,156.29
Bend	Deschutes	13,763.20	14,006.83	15,051.65	42,821.68
Boardman	Morrow	151.08	153.75	165.22	470.05
Bonanza	Klamath	320.01	325.68	349.97	995.66
Brownsville	Linn	1,076.77	1,095.83	1,441.93	3,614.53
Burns	Harney	3,524.24	3,586.62	3,854.16	10,965.02
Butte Falls	Jackson	465.59	473.84	509.18	1,448.61
Canby	Clackamas	1,356.95	1,380.97	1,856.48	4,594.40
Canyon City	Grant	428.51	436.10	468.63	1,333.24
Canyonville	Douglas	350.23	356.43	383.01	1,089.67
Carlton	Yamhill	1,186.65	1,207.65	1,447.94	3,842.24
Cascade Locks	Hood River	965.52	982.62	1,055.91	3,004.05
Central Point	Jackson	1,244.33	1,266.36	1,736.32	4,247.01
Chiloquin	Klamath	1,017.71	1,035.73	1,112.99	3,166.43
Clatskanie	Columbia	972.39	989.61	1,063.42	3,025.42
Coburg	Lane	626.29	637.37	684.92	1,948.58
Columbia City	Columbia	449.11	457.06	491.16	1,397.33
Condon	Gilliam	1,175.66	1,196.47	1,285.72	3,657.85
Coos Bay	Coos	7,222.90	7,350.75	7,899.07	22,472.72
Coquille	Coos	4,569.42	4,650.31	4,997.19	14,216.92
Cornelius	Washington	874.88	890.37	1,173.07	2,938.32
Corvallis	Benton	11,525.87	11,729.90	12,604.87	35,860.64
Cottage Grove	Lane	3,606.64	3,670.48	3,944.28	11,221.40
Cove	Union	440.87	448.68	482.14	1,371.69
Creswell	Lane	682.60	694.68	746.50	2,123.78
Dallas	Polk	4,915.53	5,002.54	5,375.70	15,293.77

Table No. 27—Continued

City	County	1944	1945	1946	Total
Dayton	Yamhill	$ 694.06	$ 707.26	$ 953.78	$ 2,356.00
Dayville	Grant	186.79	190.09	204.27	581.15
Donald	Marion	225.24	229.23	246.33	700.80
Drain	Douglas	819.94	834.46	896.70	2,551.10
Dufur	Wasco	538.39	547.92	588.79	1,675.10
Dundee	Yamhill	287.05	292.13	313.92	893.10
Eagle Point	Jackson	333.74	339.65	364.99	1,038.38
Eastside	Coos	876.25	891.76	958.28	2,726.29
Echo	Umatilla	384.56	391.37	681.91	1,457.84
Elgin	Union	1,369.31	1,393.55	1,497.50	4,260.36
Empire	Coos	913.33	929.50	1,061.92	2,904.75
Enterprise	Wallowa	2,347.20	2,388.75	2,566.94	7,302.89
Estacada	Clackamas	722.43	735.22	1,010.85	2,468.50
Eugene	Lane	28,619.65	29,126.26	31,298.89	89,044.80
Fairview	Multnomah	418.90	426.31	458.11	1,303.32
Falls City	Polk	982.01	999.39	1,073.94	3,055.34
Florence	Lane	629.03	640.17	908.71	2,177.91
Forest Grove	Washington	3,363.54	3,423.08	3,678.42	10,465.04
Fossil	Wheeler	730.67	743.60	799.07	2,273.34
Freewater	Umatilla	1,133.08	1,153.14	1,563.59	3,849.81
Gaston	Washington	457.35	465.45	500.17	1,422.97
Gearhart	Clatsop	438.13	445.88	479.14	1,363.15
Gervais	Marion	455.98	464.05	498.67	1,418.70
Gladstone	Clackamas	2,237.33	2,276.93	2,868.84	7,383.10
Glendale	Douglas	765.00	778.55	836.62	2,380.17
Gold Beach	Curry	.....	.....	854.64	854.64
Gold Hill	Jackson	736.16	749.19	805.08	2,290.43
Granite	Grant	118.11	120.21	129.17	367.49
Grants Pass	Josephine	8,279.07	8,425.62	9,054.12	25,758.81
Grass Valley	Sherman	280.18	285.14	306.41	871.73
Gresham	Multnomah	2,679.57	2,727.01	4,091.48	9,498.06
Haines	Baker	517.79	526.95	566.26	1,611.00
Halfway	Baker	571.35	581.46	624.84	1,777.65
Halsey	Linn	418.90	426.31	458.11	1,303.32
Hammond	Clatsop	579.59	589.85	633.85	1,803.29
Harrisburg	Linn	854.28	869.40	934.25	2,657.93
Helix	Umatilla	166.19	169.13	181.74	517.06
Heppner	Morrow	1,565.72	1,593.43	2,131.35	5,290.50
Hermiston	Umatilla	1,102.87	1,122.39	3,164.74	5,390.00
Hillsboro	Washington	5,146.26	5,237.36	5,628.03	16,011.65
Hines	Harney	929.82	946.28	1,016.86	2,892.96
Hood River	Hood River	4,504.87	4,584.61	4,926.59	14,016.07
Hubbard	Marion	531.52	540.93	581.28	1,653.73
Huntington	Baker	1,017.72	1,035.73	1,112.99	3,166.44
Imbler	Union	249.97	254.39	273.37	777.73
Independence	Polk	1,884.35	1,917.71	2,415.23	6,217.29
Ione	Morrow	359.84	366.21	393.53	1,119.58
Island City	Union	243.10	247.40	265.86	756.36
Jacksonville	Jackson	1,045.17	1,063.69	1,143.03	3,251.89
Jefferson	Marion	657.88	669.52	719.46	2,046.86
John Day	Grant	972.39	989.61	1,063.42	3,025.42
Jordan Valley	Malheur	376.32	382.98	411.55	1,170.85
Joseph	Wallowa	814.45	828.86	890.69	2,534.00
Junction City	Lane	1,630.27	1,659.13	1,782.89	5,072.29
Juntura	Malheur	.....	.....	250.84	250.84
Klamath Falls	Klamath	22,657.56	23,058.64	24,778.67	70,494.87
Lafayette	Yamhill	561.74	571.68	841.13	1,974.55
La Grande	Union	10,640.00	10,828.35	11,636.07	33,104.42
Lakeview	Lake	3,386.89	3,446.85	3,703.96	10,537.70
Lebanon	Linn	3,748.11	3,814.45	4,098.99	11,661.55
Lexington	Morrow	306.28	311.70	334.95	952.93
Lonerock	Gilliam	63.18	64.30	69.09	196.57
Long Creek	Grant	326.88	332.66	357.48	1,017.02

Table No. 27—Continued

City	County	1944	1945	1946	Total
Lostine	Wallowa	$ 280.18	$ 285.14	$ 306.41	$ 871.73
Madras	Jefferson	565.86	575.87	618.83	1,760.56
Malin	Klamath	734.79	747.79	803.58	2,286.16
Maupin	Wasco	366.71	373.20	401.04	1,140.95
McMinnville	Yamhill	5,089.95	5,180.05	5,566.45	15,836.45
Medford	Jackson	15,493.73	15,767.99	16,944.18	48,205.90
Merrill	Klamath	889.99	905.74	973.30	2,769.03
Milton	Umatilla	2,395.27	2,437.67	2,777.22	7,610.16
Milwaukie	Clackamas	2,569.70	2,615.19	7,729.35	12,914.24
Mitchell	Wheeler	300.78	306.11	328.95	935.84
Molalla	Clackamas	1,245.71	1,267.76	1,856.48	4,369.95
Monmouth	Polk	1,325.37	1,348.83	1,610.15	4,284.35
Monroe	Benton	427.14	434.70	467.12	1,328.96
Moro	Sherman	424.39	431.90	464.12	1,320.41
Mosier	Wasco	296.66	301.91	324.43	923.00
Mt. Angel	Marion	1,417.39	1,442.48	1,921.07	4,780.94
Myrtle Creek	Douglas	605.69	616.41	662.39	1,884.49
Myrtle Point	Coos	1,779.97	1,811.48	1,946.61	5,538.06
Nehalem	Tillamook	339.24	345.24	371.00	1,055.48
Newberg	Yamhill	4,065.37	4,137.33	4,445.95	12,648.65
Newport	Lincoln	2,772.97	2,822.05	3,032.56	8,627.58
North Bend	Coos	5,853.58	5,957.20	6,401.57	18,212.35
North Powder	Union	516.41	525.55	564.76	1,606.72
Nyssa	Malheur	2,547.72	2,592.82	2,786.23	7,926.77
Oakland	Douglas	504.05	512.97	551.24	1,568.26
Oakridge	Lane	714.19	726.83	781.04	2,222.06
Oceanlake	Lincoln	.....	.....	836.62	836.62
Ontario	Malheur	4,877.07	4,963.40	5,333.64	15,174.11
Oregon City	Clackamas	8,410.92	8,559.81	9,198.31	26,169.04
Oswego	Clackamas	2,370.55	2,412.51	3,672.42	8,455.48
Paisley	Lake	325.50	331.27	355.98	1,012.75
Pendleton	Umatilla	12,150.78	12,365.87	13,288.29	37,804.94
Philomath	Benton	1,175.66	1,196.47	1,315.76	3,687.89
Phoenix	Jackson	593.32	603.83	648.87	1,846.02
Pilot Rock	Umatilla	491.69	500.39	717.96	1,710.04
Portland	Multnomah	279,625.99	284,575.80	305,803.31	870,005.10
Port Orford	Curry	1,036.94	1,055.30	1,134.02	3,226.26
Powers	Coos	.....	.....	1,144.53	1,144.53
Prairie City	Grant	888.61	904.34	971.80	2,764.75
Prineville	Crook	3,238.56	3,295.89	3,541.74	10,076.19
Rainier	Columbia	1,624.77	1,653.54	1,776.88	5,055.19
Redmond	Deschutes	2,576.57	2,622.17	3,250.35	8,449.09
Reedsport	Douglas	1,951.65	1,986.20	2,972.48	6,910.33
Richland	Baker	348.85	355.03	381.51	1,085.39
Riddle	Douglas	293.92	299.12	321.43	914.47
Rockaway	Tillamook	846.04	861.01	925.24	2,632.29
Rogue River	Jackson	526.03	535.34	575.27	1,636.64
Roseburg	Douglas	6,762.80	6,882.51	7,395.90	21,041.21
St. Helens	Columbia	5,911.27	6,015.90	6,464.65	18,391.82
St. Paul	Marion	251.34	255.79	274.87	782.00
Salem	Marion	42,450.15	43,201.58	46,424.14	132,075.87
Sandy	Clackamas	649.64	661.13	991.33	2,302.10
Scappoose	Columbia	461.47	469.64	754.01	1,685.12
Scio	Linn	482.08	490.61	527.21	1,499.90
Scotts Mills	Marion	311.77	317.29	340.96	970.02
Seaside	Clatsop	3,985.71	4,056.26	4,358.83	12,400.80
Shaniko	Wasco	75.54	76.88	82.61	235.03
Sheridan	Yamhill	1,777.23	1,808.69	2,259.02	5,844.94
Sherwood	Washington	613.93	624.79	845.63	2,084.35
Silver Lake	Lake	133.22	.....	.....	133.22
Silverton	Marion	4,017.30	4,088.41	4,393.38	12,499.09
Sodaville	Linn	135.97	138.38	148.70	423.05
Springfield	Lane	5,225.92	5,318.43	5,715.15	16,259.50

Table No. 27—Continued

City	County	1944	1945	1946	Total
Stanfield	Umatilla	$ 331.00	$ 336.86	$ 850.14	$ 1,518.00
Stayton	Marion	1,490.18	1,516.56	1,629.68	4,636.42
Sublimity	Marion	384.56	391.37	420.56	1,196.49
Summerville	Union	109.87	111.82	120.16	341.85
Sumpter	Baker	576.84	587.05	630.84	1,794.73
Sutherlin	Douglas	721.05	733.82	1,952.61	3,407.48
Sweet Home	Linn	1,497.04	1,523.54	3,215.80	6,236.38
Talent	Jackson	523.28	532.54	572.27	1,628.09
The Dalles	Wasco	8,605.95	8,758.29	9,411.60	26,775.84
Tillamook	Tillamook	3,778.32	3,845.20	4,132.03	11,755.55
Toledo	Lincoln	3,142.42	3,198.05	3,436.60	9,777.07
Troutdale	Multnomah	289.79	294.92	316.92	901.63
Tualatin	Washington	247.22	251.59	357.48	856.29
Turner	Marion	568.60	578.67	621.83	1,769.10
Umatilla	Umatilla	508.17	517.17	555.74	1,581.08
Union	Union	1,920.06	1,954.05	2,099.81	5,973.92
Vale	Malheur	1,487.43	1,513.76	1,626.68	4,627.87
Vernonia	Columbia	1,939.29	1,973.62	2,120.84	6,033.75
Waldport	Lincoln	865.26	880.58	946.27	2,692.11
Wallowa	Wallowa	1,150.94	1,171.31	1,258.68	3,580.93
Warrenton	Clatsop	1,874.74	1,907.93	2,050.24	5,832.91
Wasco	Sherman	416.15	423.52	455.11	1,294.78
West Linn	Clackamas	2,973.49	3,026.12	3,251.85	9,251.46
Weston	Umatilla	683.97	696.08	748.00	2,128.05
West Salem	Polk	2,046.42	2,082.64	2,238.00	6,367.06
Wheeler	Tillamook	355.72	362.01	389.02	1,106.75
Willamina	Yamhill	929.82	946.28	1,330.78	3,206.88
Woodburn	Marion	2,722.15	2,770.34	3,304.42	8,796.91
Yamhill	Yamhill	574.10	584.26	627.84	1,786.20
Yoncalla	Douglas	380.44	387.17	567.76	1,335.37
Total amounts disbursed		$734,315.57	$747,178.50	$827,660.31	$2,309,154.38

Recapitulation

	1944	1945	1946	Total
Original apportionment	$736,168.35	$745,461.30	$827,524.73	$2,309,154.38
Amounts not disbursed*	—1,852.78	— 135.58	.....	— 1,988.36
Amounts carried over for reapportionment	.....	1,852.78	135.58	1,988.36
Total amounts disbursed	$734,315.57	$747,178.50	$827,660.31	$2,309,154.38

* The $1,852.78 not disbursed in 1944 represents the total of apportionments to 16 small incorporated cities not having functioning city governments. The $135.58 not disbursed in 1945 is the apportionment to the city of Silver Lake, which city was disincorporated in 1945.

Table No. 28

MILEAGES OF PRIMARY STATE HIGHWAYS

The mileages given in this table are inclusive of mileages within cities and towns.

Hwy. No.	Highway	Total Mileage of Highway	Miles of Different Types of Improvement						
			Concrete Pavement	Bituminous Pavement	Bituminous Macadam	Oiled Surfacing	Unoiled Surfacing	Graded Only	Unimproved
1	Pacific	227.01	74.42	127.60	24.72	0.27			
1E	Pacific, East	113.07	42.62	61.54	8.91				
1W	Pacific, West	116.07	54.92	31.78	29.37				
2	Columbia River	315.81	25.65	166.94	72.27	50.95			
3	Oswego	11.55	7.53	4.02					
4	The Dalles-California	298.03	2.42	5.74	55.02	234.85			
5	John Day	282.96			39.53	215.33	28.10		
6	Old Oregon Trail	238.64	2.74	6.95	169.96	58.99			
7	Central Oregon	258.59	0.04	0.27	58.94	199.34			
8	Oregon-Washington	35.85		8.07	27.78				
9	Oregon Coast	383.72	27.41	35.62	114.61	203.90			2.18
10	Wallowa Lake	71.95	0.24	2.95	12.50	56.26			
11	Enterprise-Lewiston	45.28		0.04		0.36	35.44	8.59	0.85
12	Baker-Homestead	81.06		0.33		48.99	3.90		27.84
13	Baker-Unity	46.41		0.42		9.04	15.92	21.03	
14	Crooked River	42.48				0.13		42.35	
15	McKenzie	111.55	0.25	0.46	33.25	77.59			
16	Santiam	101.05		21.51	26.92	37.04	10.30	5.28	
17	McKenzie-Bend	20.07				20.07			
18	Willamette	86.65			4.11	82.54			
19	Fremont	157.71			51.13	106.58			
20	Klamath Falls-Lakeview	95.84	3.82	1.26	42.37	42.35	6.04		
21	Green Springs	59.08		5.69	33.86	19.53			
22	Crater Lake	74.32	8.88	0.14	44.50	20.80			
23	Dairy-Bonanza	7.02				7.02			
24	Burns-Crane	28.89		0.04		0.35	28.50		
25	Redwood	42.51	0.11		10.83	31.57			
26	Mount Hood	102.27	11.53	13.71	34.00	43.03			
27	Alsea	59.11			3.19	35.32	20.60		
28	Pendleton-John Day	122.03		1.61	30.10	80.13	3.41		6.78
29	Tualatin Valley	42.28	20.18	22.10					
30	Salem-Dallas	15.53	0.16	9.52	5.85				
31	Albany-Corvallis	11.12	10.26	0.86					
32	Three Rivers	24.74			4.41	20.33			
33	Corvallis-Newport	56.90	0.57		27.67	28.66			
34	Siuslaw	67.45			15.98	51.47			
35	Coos Bay-Roseburg	61.81	0.11	0.31	9.01	52.38			
36	Pendleton-Cold Springs	30.54			5.22	24.81	0.51		
37	Wilson River	64.32	1.70	0.48	15.21	24.11			12.82
38	Oregon Caves	19.70				19.70			
39	Salmon River	45.08	7.25	5.45	32.38				
40	Beaverton-Hillsdale	6.72	4.10	2.62					
41	Ochoco	104.08			1.55	65.32	37.21		
42	Sherman	68.85			15.86	52.99			
53	Monmouth-Independence	2.37		2.37					
44	Wapinitia	40.00		1.00	23.03	15.97			
45	Umpqua	50.13	0.59		33.52	16.02			
46	Necanicum	22.11			9.24	12.87			
47	Sunset	74.83	3.61	0.73	28.46	20.07		7.30	14.66
48	John Day-Burns	67.05			18.63	18.02	30.40		
49	Lakeview-Burns	90.10				90.10			
50	Klamath Falls-Malin	27.14	0.10		18.14	8.90			
51	West Portland-Hubbard	17.16	4.07			0.04	2.73	0.26	10.06
52	Heppner	84.37				63.13	21.24		
53	Warm Springs	46.43				14.52		24.91	7.00
54	Boardman-Stanfield	25.52			25.52				
55	Halfway	11.15				11.15			
	Totals	4,804.06	315.28	542.13	1,217.55	2,292.89	244.30	109.72	82.19

Table No. 28

MILEAGES OF PRIMARY STATE HIGHWAYS

The mileages given in this table are inclusive of mileages within cities and towns.

Hwy. No.	Highway	Total Mileage of Highway	Miles of Different Types of Improvement						
			Concrete Pavement	Bituminous Pavement	Bituminous Macadam	Oiled Surfacing	Unoiled Surfacing	Graded Only	Unimproved
1	Pacific	227.01	74.42	127.60	24.72	0.27			
1E	Pacific, East	113.07	42.62	61.54	8.91				
1W	Pacific, West	116.07	54.92	31.78	29.37				
2	Columbia River	315.81	25.65	166.94	72.27	50.95			
3	Oswego	11.55	7.53	4.02					
4	The Dalles-California	298.03	2.42	5.74	55.02	234.85			
5	John Day	282.96			39.53	215.33	28.10		
6	Old Oregon Trail	238.64	2.74	6.95	169.96	58.99			
7	Central Oregon	258.59	0.04	0.27	58.94	199.34			
8	Oregon-Washington	35.85		8.07	27.78				
9	Oregon Coast	383.72	27.41	35.62	114.61	203.90			2.18
10	Wallowa Lake	71.95	0.24	2.95	12.50	56.26			
11	Enterprise-Lewiston	45.28		0.04		0.36	35.44	8.59	0.85
12	Baker-Homestead	81.06		0.33		48.99	3.90		27.84
13	Baker-Unity	46.41		0.42		9.04	15.92	21.03	
14	Crooked River	42.48				0.13		42.35	
15	McKenzie	111.55	0.25	0.46	33.25	77.59			
16	Santiam	101.05		21.51	26.92	37.04	10.30	5.28	
17	McKenzie-Bend	20.07				20.07			
18	Willamette	86.65			4.11	82.54			
19	Fremont	157.71			51.13	106.58			
20	Klamath Falls-Lakeview	95.84	3.82	1.26	42.37	42.35	6.04		
21	Green Springs	59.08		5.69	33.86	19.53			
22	Crater Lake	74.32	8.88	0.14	44.50	20.80			
23	Dairy-Bonanza	7.02				7.02			
24	Burns-Crane	28.89		0.04		0.35	28.50		
25	Redwood	42.51	0.11		10.83	31.57			
26	Mount Hood	102.27	11.53	13.71	34.00	43.03			
27	Alsea	59.11			3.19	35.32	20.60		
28	Pendleton-John Day	122.03		1.61	30.10	80.13	3.41		6.78
29	Tualatin Valley	42.28	20.18	22.10					
30	Salem-Dallas	15.53	0.16	9.52	5.85				
31	Albany-Corvallis	11.12	10.26	0.86					
32	Three Rivers	24.74			4.41	20.33			
33	Corvallis-Newport	56.90	0.57		27.67	28.66			
34	Siuslaw	67.45			15.98	51.47			
35	Coos Bay-Roseburg	61.81	0.11	0.31	9.01	52.38			
36	Pendleton-Cold Springs	30.54			5.22	24.81	0.51		
37	Wilson River	54.32	1.70	0.48	15.21	24.11			12.82
38	Oregon Caves	19.70				19.70			
39	Salmon River	45.08	7.25	5.45	32.38				
40	Beaverton-Hillsdale	6.72	4.10	2.62					
41	Ochoco	104.08			1.55	65.32	37.21		
42	Sherman	68.85			15.86	52.99			
53	Monmouth-Independence	2.37		2.37					
44	Wapinitia	40.00		1.00	23.03	15.97			
45	Umpqua	50.13	0.59		33.52	16.02			
46	Necanicum	22.11			9.24	12.87			
47	Sunset	74.83	3.61	0.73	28.46	20.07		7.30	14.66
48	John Day-Burns	67.05			18.63	18.02	30.40		
49	Lakeview-Burns	90.10				90.10			
50	Klamath Falls-Malin	27.14	0.10		18.14	8.90			
51	West Portland-Hubbard	17.16	4.07			0.04	2.73	0.26	10.06
52	Heppner	84.37				63.13	21.24		
53	Warm Springs	46.43				14.52		24.91	7.00
54	Boardman-Stanfield	25.52			25.52				
55	Halfway	11.15				11.15			
	Totals	4,804.06	315.28	542.13	1,217.55	2,292.89	244.30	109.72	82.19

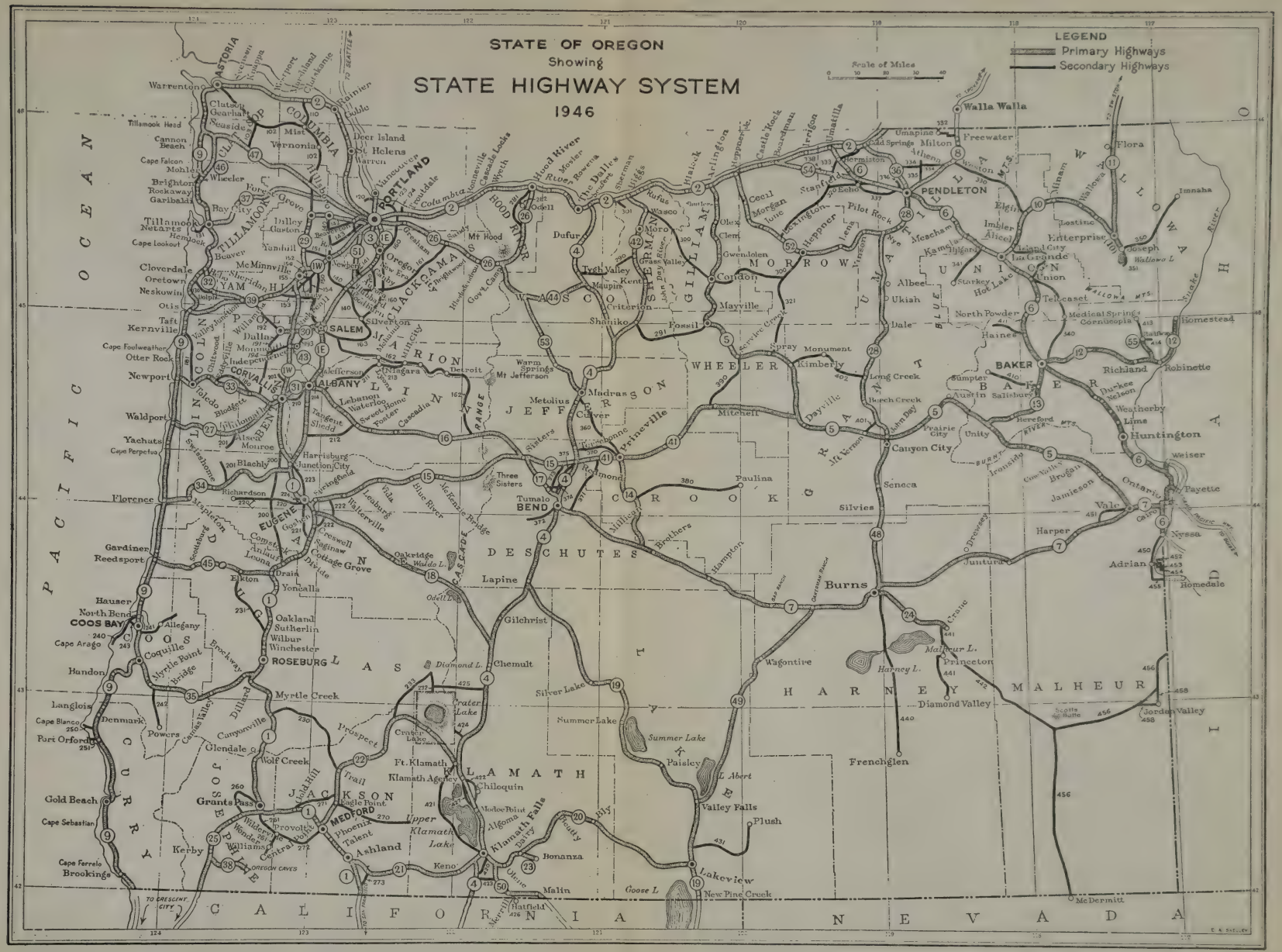
STATE OF OREGON
Showing
STATE HIGHWAY SYSTEM
1946
LEGEND
Primary Highways
Secondary Highways
Scale of Miles
PACIFIC OCEAN
CALIFORNIA
NEVADA
IDAHO
ASTORIA
PORTLAND
SALEM
EUGENE
ALBANY
CORVALLIS
COOS BAY
ROSEBURG
MEDFORD
KLAMATH FALLS
BEND
PENDLETON
BAKER
LA GRANDE
ONTARIO
BURNS
LAKEVIEW
Warrenton
Clatsop
Columbia
Tillamook
Yamhill
Marion
Polk
Lincoln
Linn
Benton
Lane
Douglas
Coos
Curry
Josephine
Jackson
Klamath
Lake
Deschutes
Crook
Jefferson
Wasco
Hood River
Sherman
Gilliam
Morrow
Umatilla
Union
Wallowa
Grant
Harney
Malheur
Baker
Wheeler
Multnomah
Clackamas
Columbia River
Willamette River
Snake River
Columbia River Highway
Oregon Caves
Crater Lake
Diamond L.
Summer Lake
Goose L.
Malheur L.
Harney L.
Upper Klamath Lake
Klamath Falls
Lakeview
Bend
Redmond
Prineville
Madras
Condon
Heppner
Pendleton
Hermiston
Walla Walla
Milton
Freewater
La Grande
Baker
Ontario
Burns
Juntura
Frenchglen
Diamond Valley
Princeton
Crane
Silvies
Canyon City
John Day
Prairie City
Mt. Vernon
Dayville
Monument
Spray
Fossil
Mayville
Shaniko
Grass Valley
Moro
Dufur
The Dalles
Hood River
Mt. Hood
Government Camp
Timberline Lodge
Detroit
Mt. Jefferson
Three Sisters
Paulina
Tumalo
Lapine
Gilchrist
Chemult
Crescent
Silver Lake
Summer Lake
Paisley
Valley Falls
Plush
Lakeview
New Pine Creek
McDermitt
Chiloquin
Ft. Klamath
Klamath Agency
Algoma
Modoc Point
Keno
Bonanza
Malin
Hatfield
Ashland
Talent
Phoenix
Medford
Eagle Point
Grants Pass
Gold Beach
Brookings
Cape Sebastian
Cape Ferrelo
Kerby
Wolf Creek
Glendale
Canyonville
Myrtle Creek
Roseburg
Oakland
Sutherlin
Winchester
Wilbur
Reedsport
Gardiner
Florence
Yachats
Waldport
Newport
Otter Rock
Cape Foulweather
Lincoln City
Tillamook
Cloverdale
Netarts
Oretown
Neskowin
Cape Lookout
Cape Falcon
Cannon Beach
Tillamook Head
Seaside
Gearhart
Clatsop
Astoria
Warrenton
Vernonia
Mist
Deer Island
Columbia City
St. Helens
Scappoose
Portland
Vancouver
Camas
Washougal
Troutdale
Gresham
Oregon City
Canby
Woodburn
Hubbard
Aurora
Donald
Newberg
Dundee
McMinnville
Lafayette
Dayton
Yamhill
Carlton
Amity
Willamina
Grand Ronde
Sheridan
Dallas
Monmouth
Independence
Falls City
Mill City
Gates
Detroit
Lyons
Stayton
Sublimity
Scio
Jefferson
Albany
Lebanon
Waterloo
Sweet Home
Foster
Cascadia
Tangent
Shedd
Harrisburg
Junction City
Monroe
Philomath
Corvallis
Alsea
Blachly
Veneta
Elmira
Fern Ridge Reservoir
Cottage Grove
Creswell
Coburg
Goshen
Springfield
Eugene
Coburg
Crow
Cottage Grove
Drain
Elkton
Yoncalla
Oakridge
Waldo L.
Willamette Pass
Odell L.
Diamond L.
Crater Lake
Prospect
Butte Falls
Eagle Point
Trail
Shady Cove
Gold Hill
Rogue River
Grants Pass
Merlin
Galice
Wilderville
Provolt
Kerby
Williams
Central Point
Phoenix
Talent
Ashland
Keno
Bonanza
Malin
Hatfield
Merrill
Tulelake
Lakeview
New Pine Creek
McDermitt
Nevada
California
Oregon
Idaho
Washington
Columbia River
Snake River
Willamette River
Deschutes River
John Day River
Owyhee River
Malheur River
Harney Lake
Malheur Lake
Summer Lake
Goose Lake
Upper Klamath Lake
Crater Lake
Diamond Lake
Odell Lake
Waldo Lake
Timberline Lodge
Oregon Caves
Mt. Hood
Mt. Jefferson
Three Sisters
Cascade Range
Blue Mountains
Wallowa Mts.
Strawberry Mts.
Ochoco Mts.
Aldrich Mts.
Grant
Harney
Malheur
Lake
Deschutes
Crook
Jefferson
Wheeler
Gilliam
Morrow
Umatilla
Union
Wallowa
Baker
Multnomah
Clackamas
Columbia
Tillamook
Yamhill
Marion
Polk
Lincoln
Linn
Benton
Lane
Douglas
Coos
Curry
Josephine
Jackson
Klamath

Table No. 29

MILEAGES OF PRIMARY STATE HIGHWAYS BY COUNTIES

The mileages given in this table are inclusive of mileages within cities and towns.

County	Total Mileage in County	Miles of Different Types of Improvement						
		Concrete Pavement	Bituminous Pavement	Bituminous Macadam	Oiled Surfacing	Unoiled Surfacing	Graded Only	Unimproved
Baker	230.84	0.98	1.66	57.51	89.80	32.02	21.03	27.84
Benton	93.41	17.85	11.21	23.37	40.98	.....	.....	.....
Clackamas	78.62	32.29	1.49	36.94	2.90	.....	.....	5.00
Clatsop	109.39	16.54	34.75	31.77	26.33	.....	.....	.....
Columbia	56.21	3.90	51.50	.....	0.81	.....	.....	.....
Coos	102.46	21.75	2.07	24.96	53.68	.....	.....	.....
Crook	82.86	.....	.....	1.55	29.81	13.22	38.28	.....
Curry	90.12	0.37	.....	12.15	77.60	.....	.....	.....
Deschutes	204.28	0.52	3.45	47.35	148.89	.....	4.07	.....
Douglas	199.98	30.78	69.08	35.10	65.02	.....	.....	.....
Gilliam	97.21	0.05	.....	14.91	82.25	.....	.....	.....
Grant	199.43	.....	.....	21.86	146.71	24.08	.....	6.78
Harney	185.55	.....	0.04	49.49	88.57	47.45	.....	.....
Hood River	69.44	0.53	25.41	3.37	40.13	.....	.....	.....
Jackson	148.03	18.93	36.27	68.71	24.12	.....	.....	.....
Jefferson	71.07	.....	.....	15.15	49.28	.....	6.64	.....
Josephine	93.95	6.34	14.81	21.26	51.54	.....	.....	.....
Klamath	301.41	5.86	3.82	105.14	186.59	.....	.....	.....
Lake	244.39	.....	.....	51.13	187.22	6.04	.....	.....
Lane	286.27	33.91	16.86	55.67	179.83	.....	.....	.....
Lincoln	137.90	1.23	.....	69.87	46.20	20.60	.....	.....
Linn	117.39	6.12	42.44	21.94	31.31	10.30	5.28	.....
Malheur	182.42	1.60	1.39	60.01	112.74	6.68	.....	.....
Marion	47.73	15.69	32.00	.....	0.04	.....	.....	.....
Morrow	107.44	.....	.....	15.52	81.13	10.79	.....	.....
Multnomah	119.07	32.16	83.14	3.24	.....	.....	.....	0.53
Polk	57.90	5.68	18.34	32.77	1.11	.....	.....	.....
Sherman	63.92	0.04	.....	30.69	33.19	.....	.....	.....
Tillamook	132.45	1.70	16.54	57.01	55.02	.....	.....	2.18
Umatilla	246.70	0.16	11.62	144.55	79.41	10.96	.....	.....
Union	84.49	0.24	4.70	37.93	41.62	.....	.....	.....
Wallowa	83.71	.....	1.00	7.72	30.11	35.44	8.59	0.85
Wasco	190.17	.....	20.00	37.82	107.08	.....	18.27	7.00
Washington	107.23	16.13	26.14	16.79	5.87	2.73	7.56	32.01
Wheeler	107.26	.....	.....	.....	83.27	23.99	.....	.....
Yamhill	73.36	43.93	12.40	4.30	12.73	.....	.....	.....
Totals	4,804.06	315.28	542.13	1,217.55	2,292.89	244.30	109.72	82.19

Table No. 30

MILEAGES OF SECONDARY STATE HIGHWAYS BY COUNTIES

The mileages given in this table are inclusive of mileages within cities and towns.

County	Total Mileage in County	Miles of Different Types of Improvement						
		Concrete Pavement	Bituminous Pavement	Bituminous Macadam	Oiled Surfacing	Unoiled Surfacing	Graded Only	Unimproved
Baker	70.29	.....	.....	.....	20.20	46.16	.....	3.93
Benton	31.85	.....	0.13	.....	11.84	19.88	.....	.....
Clackamas	89.71	3.89	17.82	4.85	56.49	6.51	.....	0.15
Clatsop	43.70	11.09	4.27	.....	22.48	.....	.....	5.86
Columbia	42.04	.....	0.78	8.42	29.51	3.33	.....	.....
Coos	55.28	1.08	0.94	.....	37.15	10.91	.....	5.20
Crook	81.45	.....	.....	.....	0.40	62.95	18.10	.....
Curry	6.33	.....	.....	.....	.....	5.29	.....	1.04
Deschutes	53.41	.....	0.56	.....	25.68	3.84	23.33	.....
Douglas	97.72	.....	0.10	.....	41.99	55.63	.....	.....
Gilliam	42.28	.....	0.14	.....	15.30	9.95	5.78	11.11
Grant	41.20	.....	.....	.....	5.35	26.24	2.56	7.05
Harney	122.48	.....	.....	.....	.....	23.25	49.33	49.90
Hood River	21.08	3.78	0.31	0.86	14.20	1.93	.....	.....
Jackson	97.63	.....	17.15	.....	64.28	.....	0.23	15.97
Jefferson	16.41	.....	.....	.....	.....	0.14	16.27	.....
Josephine	46.13	.....	1.05	.....	30.43	14.65	.....	.....
Klamath	106.78	.....	0.61	17.25	34.17	17.35	7.00	30.40
Lake	46.21	.....	.....	.....	.....	21.42	13.72	11.07
Lane	141.68	1.83	13.85	8.42	13.47	93.90	.....	10.21
Lincoln	44.31	.....	.....	5.55	7.78	30.98	.....	.....
Linn	86.53	0.04	6.31	.....	66.84	13.34	.....	.....
Malheur	208.35	.....	.....	.....	140.88	24.45	.....	43.02
Marion	139.56	0.25	65.89	.....	46.06	.....	0.43	26.93
Morrow	74.24	.....	.....	.....	49.34	24.90	.....	.....
Multnomah	16.78	6.97	9.31	.....	0.50	.....	.....	.....
Polk	56.24	0.06	3.75	4.05	46.07	2.31	.....	.....
Sherman	40.57	.....	.....	.....	.....	26.48	4.23	9.86
Tillamook	18.55	1.56	0.10	.....	7.49	3.94	3.02	2.44
Umatilla	117.90	0.05	0.29	2.64	101.64	13.28	.....	.....
Union	81.79	.....	.....	.....	56.79	19.48	2.60	2.92
Wallowa	36.88	.....	.....	.....	6.16	8.08	22.64	.....
Wasco	31.98	.....	.....	.....	.....	22.70	5.48	3.80
Washington	67.94	0.35	1.54	7.17	53.97	4.91	.....	.....
Wheeler	61.28	.....	.....	.....	0.60	35.12	6.43	19.13
Yamhill	66.73	9.71	3.70	.....	50.34	2.98	.....	.....
Totals	2,403.29	40.66	148.60	59.21	1,057.40	656.28	181.15	259.99

Table No. 31

MILEAGES OF SECONDARY STATE HIGHWAYS

The mileages given in this table are inclusive of mileages within cities and towns.

Hwy. No.	Highway	Total Mileage of Highway	Miles of Different Types of Improvement						
			Concrete Pavement	Bituminous Pavement	Bituminous Macadam	Oiled Surfacing	Unoiled Surfacing	Graded Only	Unimproved
102	Nehalem	85.51	11.09	5.81	15.59	49.69	3.33		
103	Fishhawk Falls	5.86							5.86
110	Mist-Clatskanie	11.90				11.90			
120	Swift	2.94	2.09	0.85					
122	Vancouver Avenue	0.50	0.50						
123	Northeast Portland	5.10	4.17	0.93					
124	Sun Dial	1.25		1.25					
130	Little Nestucca	9.40					3.94	3.02	2.44
131	Netarts	9.15	1.56	0.10		7.49			
140	Hillsboro-Silverton	52.19	0.35	32.22		11.73	7.89		
141	Beaverton-Aurora	20.81	0.39	5.42		14.85			0.15
142	Farmington	9.89				9.89			
143	Scholls	12.40				12.40			
150	Salem-Dayton	20.10	0.03			20.07			
151	Yamhill-Newberg	11.65	0.80	0.58		10.27			
152	Three Mile Lane	8.46	7.83	0.63					
153	Bellevue-Hopewell	14.89				14.89			
154	Lafayette	5.75				5.75			
155	Amity-Dayton	7.03				7.03			
156	McMinnville	1.80	1.05	0.75					
160	Cascade	44.61	3.12	19.50		21.99			
161	Woodburn-Sandy	46.67	0.62	7.42	4.85	27.27	6.51		
162	North Santiam	78.29		15.46		35.47		0.43	26.93
163	Silver Creek Falls	40.82		12.49		28.33			
170	Canby-Marquam	8.02	0.22			7.80			
180	Eddyville-Blodgett	18.92					18.92		
181	Siletz	31.86			5.55	7.78	18.53		
191	Kings Valley	28.05		0.43		25.76	1.86		
192	Dallas-Coast	14.83			4.05	10.78			
193	Independence	6.38	0.06	3.32		3.00			
194	Monmouth	7.20				6.75	0.45		
200	Territorial	45.99			3.33	2.09	40.57		
201	Alsea-Deadwood	27.40					27.40		
202	Tampico-Lewisville	5.46					5.46		
210	Corvallis-East Side	10.19		0.28		9.91			
211	Albany-Lyons	24.68	0.04	6.16		5.14	13.34		
212	Halsey-Sweet Home	21.51				21.51			
213	Mehama-Mill City	8.83				8.83			
214	Albany Airport	1.07				1.07			
220	Richardson-Eugene	38.29		1.03	5.09	6.98	23.86		1.33
221	Fox Hollow	15.50	1.13				5.87		8.50
222	Springfield-Creswell	15.52				6.42	9.10		
223	Junction City-Eugene	13.52	0.70	12.82					
224	W. 7th St.-W. 11th St.	0.38							0.38
230	Tiller-Trail	50.03				28.51	21.52		
231	Elkton-Sutherlin	29.26		0.10			29.16		
232	Crater Lake-North	5.29				5.29			
233	West Diamond Lake	23.89				23.89			
240	Cape Arago	14.25	0.34	0.22		10.57	3.12		
241	Coos River	18.86	0.59			5.33	7.74		5.20
242	Powers	18.62	0.15			18.42	0.05		
243	Empire-Coos Bay	3.55		0.72		2.83			
250	Cape Blanco	5.54					4.50		1.04
251	Port Orford	0.79					0.79		
260	Rogue River Loop	23.00		1.05		7.30	14.65		
261	Williams	23.13				23.13			
270	Little Butte	30.33				14.13		0.23	15.97
271	Sams Valley	17.25				17.25			

Table No. 31—Continued

MILEAGES OF SECONDARY STATE HIGHWAYS

Hwy. No.	Highway	Total Mileage of Highway	Miles of Different Types of Improvement						
			Concrete Pavement	Bituminous Pavement	Bituminous Macadam	Oiled Surfacing	Unoiled Surfacing	Graded Only	Unimproved
272	Medford-Provolt	25.42		9.54		15.88			
273	Siskiyou	7.61		7.61					
281	Hood River	17.57	2.96	0.31	0.86	13.44			
282	Odell	3.51	0.82			0.76	1.93		
290	Sherars Bridge	28.97					20.94	4.23	3.80
291	Shaniko-Fossil	43.65				0.60	22.99	11.15	8.91
300	Wasco-Heppner	90.32		0.14		44.58	18.85	5.78	20.97
301	Fulton Canyon-Wasco	1.50					1.50		
320	Lexington-Echo	39.56				39.56			
321	Heppner-Spray	41.00					41.00		
330	Weston-Elgin	41.39		0.10		41.29			
332	Sunnyside-Umapine	7.25				7.25			
333	Hermiston	17.79			0.87	16.92			
334	Athena-Holdman	16.44		0.19		2.97	13.28		
335	Havana-Helix	8.90	0.05			8.85			
336	Pendleton-Airport	1.36			1.36				
337	Stanfield-Pendleton	24.65				24.65			
338	Ordnance Depot	0.41			0.41				
340	Medical Springs	42.67				42.34	0.33		
341	Starkey	17.00					11.48	2.60	2.92
342	Cove	22.16				14.49	7.67		
350	Little Sheep Creek	30.42					7.78	22.64	
351	Joseph-Wallowa Lake	6.46				6.16	0.30		
360	Madras-Prineville	27.11				0.40	10.44	16.27	
370	O'Neil	17.81					17.81		
371	Powell Butte	17.92				0.92	7.70	9.30	
372	Century Drive	11.79		0.56		11.23			
373	Cline Falls	10.13						10.13	
374	Tumalo-Deschutes	3.90						3.90	
375	Redmond-Bend	13.53				13.53			
380	Paulina	49.08					30.98	18.10	
390	Service Cr.-Mitchell	24.85					13.87	0.76	10.22
401	Beech Creek	5.35				5.35			
402	Kimberly-Long Creek	35.85					26.24	2.56	7.05
410	Sumpter Valley	22.62					19.59		3.03
411	Haines-Anthony	12.60					11.70		0.90
413	Halfway-Cornucopia	11.52				0.37	11.15		
414	Pine Creek	3.72					3.72		
420	Midland	5.61			2.14		3.47		
421	Klamath Lake	49.70		0.61		5.36	9.33	7.00	27.40
422	Chiloquin	10.88			10.88				
423	Lower Klamath	7.55					4.55		3.00
424	Sand Creek	4.23			4.23				
425	E. Diamond Lake	14.72				14.72			
426	Hatfield	2.51				2.51			
427	Modoc Point	12.90				12.90			
431	Warner	46.21					21.42	13.72	11.07
440	Frenchglen	62.00					12.10		49.90
441	Diamond Valley	36.18					11.15	25.03	
442	Princeton-Rome	61.71						24.30	37.41
450	Nyssa-Adrian	20.95				13.00	7.95		
451	Vale-West	10.72				3.76	6.96		
452	Adrian-Parma	2.77				2.77			
453	Adrian-Arena Valley	3.19					3.19		
454	Adrian-Caldwell	4.40					4.40		
455	Homedale Spur	1.95					1.95		
456	I. O. N.	116.78				111.17			5.61
458	Jordan Valley	10.18				10.18			
	Totals	2,403.29	40.66	148.60	59.21	1,057.40	656.28	181.15	259.99

Table No. 32

MILEAGES OF ROADS OTHER THAN STATE HIGHWAYS

The mileages given here include all local and county roads, Indian service roads, National Park roads and forest development roads. They include both rural and city mileages. They do not include mileages of any primary or secondary state highways. The data have been compiled from mileages reported by the Statewide Highway Planning Survey.

County	Total Mileage in County	Miles of Different Types of Improvement					
		Concrete Pavement	Bituminous Pavement	Oiled Surfacing	Unoiled Surfacing	Graded Only	Unimproved
Baker	1,835	.....	5	19	373	1,062	376
Benton	442	8	10	5	357	52	10
Clackamas	1,690	79	168	143	1,039	200	61
Clatsop	374	29	34	74	113	111	13
Columbia	525	1	17	13	429	44	21
Coos	642	22	10	9	415	66	120
Crook	1,261	.....	.....	.....	60	754	447
Curry	265	.....	.....	.....	101	134	30
Deschutes	2,220	1	5	2	127	1,107	978
Douglas	1,528	15	11	24	884	522	72
Gilliam	567	.....	.....	.....	98	344	125
Grant	1,612	.....	1	.....	135	1,041	435
Harney	2,472	.....	1	.....	62	1,667	742
Hood River	362	2	10	3	153	80	114
Jackson	1,621	6	67	24	512	783	229
Jefferson	949	.....	2	1	117	501	328
Josephine	781	2	10	1	255	368	145
Klamath	2,944	7	55	27	277	1,086	1,492
Lake	2,916	.....	1	.....	139	1,112	1,664
Lane	1,607	32	33	175	873	392	102
Lincoln	391	.....	2	4	185	104	96
Linn	1,286	1	34	55	1,006	161	29
Malheur	2,621	.....	1	1	253	359	2,007
Marion	1,380	65	230	53	893	105	34
Morrow	1,413	.....	.....	4	298	643	468
Multnomah	1,672	177	654	286	408	43	104
Polk	538	2	21	22	427	27	39
Sherman	502	.....	1	.....	98	327	76
Tillamook	345	7	14	4	214	89	17
Umatilla	2,338	.....	19	5	695	1,039	580
Union	1,235	1	10	4	246	708	266
Wallowa	1,304	.....	8	.....	131	825	340
Wasco	1,415	1	12	26	324	864	188
Washington	1,119	5	28	120	774	86	106
Wheeler	537	.....	.....	.....	57	306	174
Yamhill	905	5	43	2	677	110	68
Totals	45,614	468	1,517	1,106	13,205	17,222	12,096

Table No. 33

LIST OF PERSONS RENDERING PROFESSIONAL OR SPECIAL SERVICES

July 1, 1944, to June 30, 1946

Name and Address	Nature of Service	Compensation
Abernathy, Doris, Bend	Court reporting	$ 1.65
Carter, O. T. (Douglas County Sheriff)	Summons service	6.75
Commonwealth, Inc., Portland	Property appraisals	325.00
Connell, J. W. (Washington County Sheriff)	Summons service	4.54
Douglas County Realty Board, Roseburg	Property appraisals	21.00
Dryer, H. A., Portland	Property appraisals	175.00
Garratt, George, Portland	Court reporting	5.00
Gault, Howard (Jackson County Sheriff)	Summons service	7.47
Hadley, H. B., Klamath Falls	House moving estimates	5.00
Harper, W. M. (Benton County Sheriff)	Summons service	2.72
Hodge, E. T., Portland	Geologic inspection	500.00
Hodges Agency, Pendleton	Property appraisals	25.00
Holbrook, M. C., Portland	Property appraisals	200.00
Holloway, E. H., Salem	Property appraisals	25.00
Kearney, C. M. (U. S. Marshal)	Summons service	5.00
Klamath Board of Realtors, Klamath Falls	Property appraisals	27.50
Manning, G. W. (Yamhill County Sheriff)	Summons service	3.50
McGowan, F. C., Portland	Property appraisals	200.00
McGrath, J. J. (San Mateo, Calif. County Sheriff)	Summons service	1.50
Mechanical Engineering Dept., Oregon State College	Engineering tests	74.64
Miller, A. B. (Wallowa County Sheriff)	Summons service	2.50
Morrison, W. H., Pendleton	Property appraisals	25.00
National City Bank, New York	Bond handling expense	2,211.54
Oddy, L. W. (Coos County Clerk)	Witness fees	4.00
Pratt, M. T. (Multnomah County Sheriff)	Summons service	4.00
Ross, J. (Santa Barbara, Calif. County Sheriff)	Summons service	2.50
Rusk, Lloyd W., Klamath Falls	House moving estimates	5.00
Spankie, G. V., Seaview, Washington	Ferry appraisals	150.00
Swortley, A. M., Corvallis	Consulting engineer service	* 105.00
Wakefield-Fries & Woodward, Portland	Property appraisals	100.00
Welp, T. P. (Lincoln County Sheriff)	Summons service	10.35

*Includes expense allowance of $5.20.

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